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ABSTRACT

Ways a microcomputer can be used to establish and maintain an evaluation database and types of data management features possible on a microcomputer are described in this report, which contains step-by-step procedures and numerous examples for establishing a database, manipulating data, and designing and printing reports. Following a brief introduction, the guide is organized around three sets of concepts needed to understand what databases are and how to use them: (1) setting up a file, (2) using a database, and (3) generating reports from the information in a database. An extensive appendix, included with this document, contains a series of tutorials which provide specific information on the various features of the program. Divided into 14 sections such as getting started, adding records, speeding data entry, and setting up reports, the tutorials summarize the discussion in this presenter's guide and present more detailed information on such features as long coded descriptions. The DB Master program requires an Apple II or Apple II Plus computer with 48K RAM memory, Applesoft, from two to four disk drives, and the DOS 3.3 16-sector disk operating system. (LMM)

No. 91 AN EVALUATOR'S GUIDE TO USING DB MASTER: A MICROCOMPUTER BASED FILE MANAGEMENT PROGRAM

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November 1983

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PRE

The Research on Evaluation Program is a Northwest Regional Educational Laboratory project of research, development, testing, and training designed to create new evaluation methodologies for use in education. This document is one of a series of papers and reports produced by program staff, visiting scholars, adjunct scholars, and project collaborators—all members of a cooperative network of colleagues working on the development of new methodologies.

How can a microcomputer be used to establish and maintain an evaluation data base? What types of data management features are possible on the microcomputer? This instructional report contains step-by-step procedures and numerous examples for establishing a data base, manipulating data, and designing and printing reports. An extensive Appendix contains specific instructions on the use of the DB Master file management program.

Nick L. Smith, Editor
Paper and Report Series

FOREWORD

This guide was developed from the author's experience in conducting workshops on data base management for public school evaluators, administrators, and other educators. The narrative portion of the guide corresponds to the information used to describe this computer application. It is not necessarily a script, but rather it contains the type of information that has proven to be of value to people just learning about data base mangement systems. The example discussed in the narrative has been generated with DB MASTER (Stoneware Inc., San Rafael, CA). A set of utility and file diskettes developed using DB MASTER which contain the examples used in this guide is available from the Research on Evaluation Program for the cost of the diskettes. The DB MASTER program is needed to use these disks. Notes on the actual use of DB MASTER are enclosed in parentheses. There are other comparable programs, and the use of this program is not meant as an endorsement of DB MASTER.

This guide should prove valuable to an evaluator who wishes to learn how a program like DB MASTER can be used for evaluation since it provides an indepth description of this system. The guide may also be used as the basis of a lecture/demonstration of the capabilities of such systems.

It is assumed that the person using the guide will be familiar with the major terminology, characteristics, and operation of microcomputer technology. A presenter should have enough experience with microcomputers and application programs to respond to questions from people viewing the demonstration. A presenter should also become familiar with DB MASTER, the program used as the basis for this guide, or any other program to be demonstrated, through use and reference to the program manual.

Of course, the best way to present a lecture/demonstration is to have a microcomputer system available with a large monitor so that participants can see the actual screens used in creating and using the program. Examples of the screens and printed output from the DB MASTER program are provided with this guide for illustrative purposes. Presenters are encouraged to develop their own data base and Handouts from information that will be of utmost interest to potential participants.

The narrative and parenthetical comments in this guide are not intended to replace the program manual, but instead to show how a program like DB MASTER can be used to accomplish tasks relevant to educational evaluation. The reader is referred to the program manual throughout this guide for a more detailed discussion of certain concepts and procedures.

Following a brief introduction, the guide is organized around three sets of concepts needed to understand what data bases are and how to use them. One set of concepts concerns setting up a file. Another set has to do with how to use a data base. The third set focuses on generating reports from the information in a data base. The Appendix, available as a separate document, is a series of tutorials which are brief descriptions of how to use the features of DB MASTER.

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*The appendix is available as a separate document.

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AN EVALUATOR'S GUIDE TO USING DB MASTER: A MICROCOMPUTER BASED FILE MANAGEMENT PROGRAM

Keeping track of information is one of the most time consuming tasks in conducting an evaluation. Respondent or subject lists need to be maintained with accurate and complete data. In some cases individuals need to be randomly selected for participation. And, once selected their responses or scores need to be charted at each point in time. In addition to study participant data, information must be kept on project personnel, timelines and products. At various points during an evaluation, information must be analyzed and summarized in the form of reports.

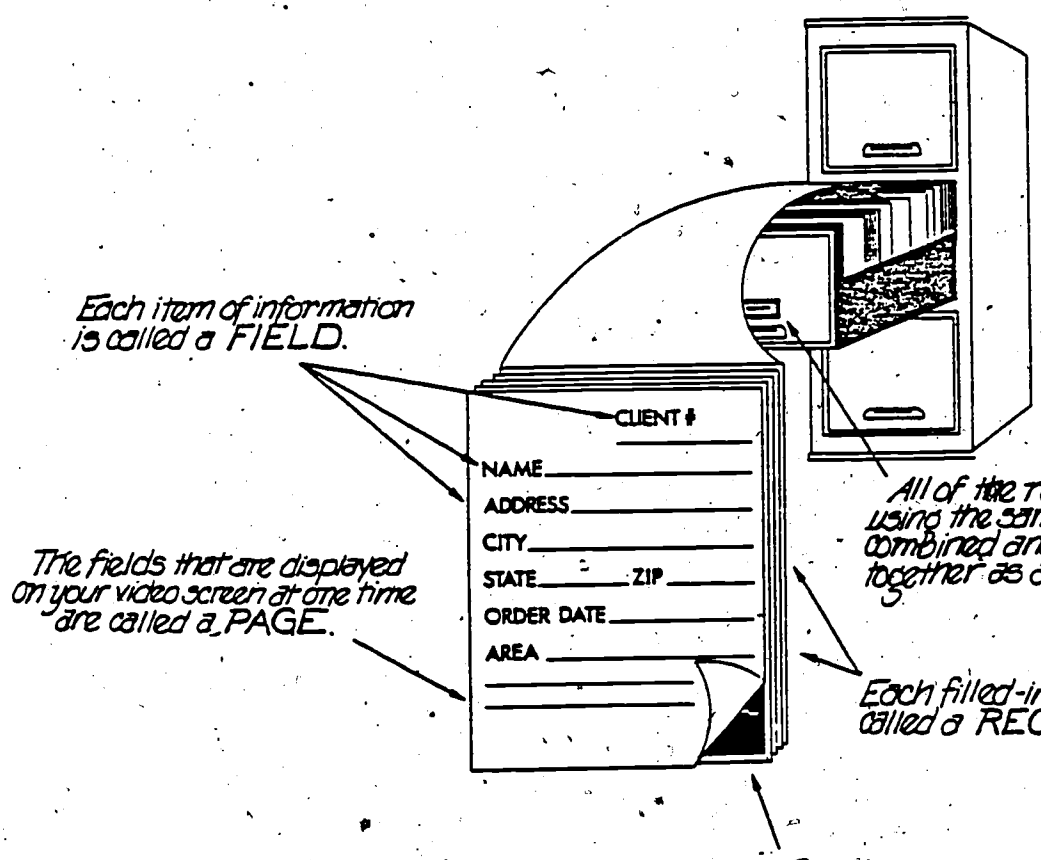
Currently, most of the information just described is recorded and stored in paper filing systems. A similar microcomputer based system may be thought of as an electronic filing system as illustrated in Handout 1. Like a paper filing system, an electronic filing system consists of a consistent set of records. Each record is a completed form and on each page of the form there is specific information. The items of information on the page are called fields. For example, the first page of a student data base might have fields which contain an identification number, the student's last name, first name, and middle initial, the student's grade, teacher, and school, sex and racial data, and any other demographic information needed. The second page of a student data base may have a set of test scores over a number of years. The third page may have parent information such as parents' names, work and home addresses and so forth. Together, the completed pages of this form make up one student record, and all of the student records created using this form constitute the file.

True data base management programs allow one to gain access to many different files at once so that information from each file may be used, for example, to generate a particular report. Files for any one subject might include; an address file, a demographic data file, a test score file, and a notes and comments file. At different times information from one or more files may be desired either in isolation or various combinations for purposes of review or reporting.

A program like DB MASTER (Stoneware, Inc., San Rafael, CA), the one used for illustrative purposes in this guide, is more appropriately called a file management system since it can only work with one set of information or file at a time. However, unlike some file management systems which limit the number of fields in any one file to 25 or fewer, DB MASTER allows files to have up to 100 fields with a total of 1020 characters per record. It also provides a way to divide the file into sub-files so that one does not have to work with all 100 fields at one time. This feature will be described during the discussion of short forms. It provides DB MASTER with the ability to emulate a true data base management system.

Data Base Elements

FIELD, PAGE, FORM, RECORD and FILE*



*From DB MASTER Program Manual, Stoneware, Inc., San Rafael, CA.

Handout 1

The following are the general characteristics of data base management programs.

Function:	Facilitates the storage, manipulation, and reporting of information
Advantages:	Handles many kinds of information Very flexible - can be used to create many different files (e.g., student records, personnel records, equipment inventories) Easy to maintain information by editing, deleting, updating, sorting, and indexing records Can be used to retrieve information about individual records or about groups of records meeting certain criteria and generate reports for specific purposes
Disadvantages:	Requires considerable time to set up Requires time to learn the operation of the more complex programs Limited statistical analysis Requires trained personnel to maintain the data base May limit the kinds and formats of reports

In the following sections of this report, the features of DB MASTER are explored to illustrate the capabilities of file management programs. The narrative portion of the text describes the general features of this computer application. The parenthical comments describe the actual operation of the DB MASTER program. A student file for a Chapter 1 program provides the context of the example used in this report. A set of diskettes containing the file and utility disks for this example is available from the Research on Evaluation Program for the cost of the disks. The DB MASTER program is needed to use these disks. The process begins with setting up a file.

Setting up a File.

As noted in the above list of characteristics, data bases require considerable time and effort to set up and maintain. A systematic planning process can facilitate both the initial development of a data base and its day-to-day use. In this section, a five-step process for developing a data base is briefly discussed. This is followed by a description of the actual procedures used to set up a file system using the DB MASTER program.

Planning a File Structure

There is a considerable amount of planning that has to be done so that (1) the creation of a file can be accomplished in an efficient manner and (2) the file will have maximum utility. These steps may be used to guide the development of a file*:

1. Determine your goals. Be clear about what you want to accomplish with the file.

2. Specify the data needed. Sketch the types of reports you expect from the file. Develop a list of needed fields. Consider the requirements of each field.

3. Setup the file. Enter the file as you have designed it. Enter some sample cases. Practice working with the data base.

4. Design the reports. Refine the sketches of reports. Enter report formats. Practice generating various reports.

5. Revise. Learning from your initial mistakes, start over with an improved design. Repeat as necessary.

6. Pilot test. Use the file with real data for a period of time. Manually confirm that the results are correct. Plan on revising again.

The following discussion concerns step one, determining goals and step two, specifying data needed. The bulk of this guide concerns the content of steps three and four, that is, setting up and practice manipulating a database (3) and generating reports (4). Based on the experience gained in these steps one can plan the revision and pilot testing of a data base, steps five and six of the above process. The terms file and data base are used synonymously in this guide.

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* From Deck, D. Chapter 1 Technical Assistance Center, NWREL, 1983.

Determine goals. In order to match requirements with the capabilities of a given data base management system, it is important to start with a set of goals for the use of the system. A good way to determine goals is to analyze the characteristics of the filing system that is to be transfered to a microcomputer or, if such a system does not yet exist, the characteristics of a comparable file. These characteristics include (1) the desired size of the data base (i.e., the total number of records anticipated and, approximately, how much information will be in each record) and (2) the anticipated uses of the system (e.g., daily updates and inquires, monthly reports). This information will help determine in general how complex and powerful a system is needed.

A data base with a small number of records (approximately 100-500 records) each with just a few fields (15 or fewer) which are accessed occasionally would indicate the need for a simple system, such as pfs: FILE (Software Publishing Corp., Mt. View, CA). These are relatively simple file management systems. A modest size data base with 500 to 1,000 records, to be used periodically to do some more sophisticated manipulations and reporting suggests a system such as DB MASTER (Stoneware, Inc., San Rafael, CA). A very compex data base made up of thousands of records and numerous files with demanding reporting requirements would need the power and flexibility of dBase II (Ashton-Tate, Culver City, CA). These are sophisticated relational data bases. After completing the next steps one would be ready to sit down and try out the data base(s) which seem appropriate to the task.

Specify the data needed. Using examples of previous reports and forms from other similar data bases one can identify the specific fields needed and their requirements. Fields are the discrete pieces of information that appear on each line of a form. Fields may have such titles as NAME, ADDRESS, OCCUPATION, or RESPONSE TO ITEM 1. The requirements for each field includes its nature and length. The nature of a field refers to the type of information in the field. For example, with DB MASTER the following types of fields are allowed:

- A number alone
- A combination of letters and numbers, or symbols (alpha-numeric)
- Dollar amounts
- Social security number
- Telephone number
- Yes/no response
- Date

Program Efficiency. The efficiency of a program depends on the way it stores and retrieves information. For example, a good program will take into account the special arrangement of social

security numbers, telephone numbers and dates so that these will be stored as numbers and yet appear on the screen in their typical format.

The length of each field and the total length of each record will determine how many records can be stored on a diskette and how quickly records can be retrieved. Therefore, a field's length should be carefully determined. DB MASTER limits the size of any given field to 30 character, but from 3 to 255 consecutive recurrences of a character, such as a blank, are stored in only two or three bytes. In this way space for information of undetermined length is provided in a relatively efficient manner.

Specifying fields and their characteristics. The DB MASTER manual provides the screen layout form which apprears in Figure 1. At the top of this form is a grid which represents a screen page. The minimum and maximum lengths associated with each field type appear at the bottom of the form. A form like this should be used to specify the fields of a proposed data base.

*(At this point it is useful to move to the computer and get ready to actually set up a data base. Insert the program diskette into drive 1 and start the system. Following the directions which appear on the screen go through the steps needed to get to the screen which gives you the choice of INSERTing a UTILITY DISK from a previously developed file or PRESSing ESCape to CREATE A NEW FILE. Along the way describe the hardware configuration to be used in the demonstration, e.g., Apple II Plus computer with 64K of RAM, two 5 1/4" disk drives, monitor, printer. Note that the DB MASTER program needs at least 48K of Ram, two or more disk drives are helpful, and it is preferable to have a printer. To demonstrate how to set up a file press 'ESC', ENTER TODAY'S DATE, and press RETURN.)

Setting up a File

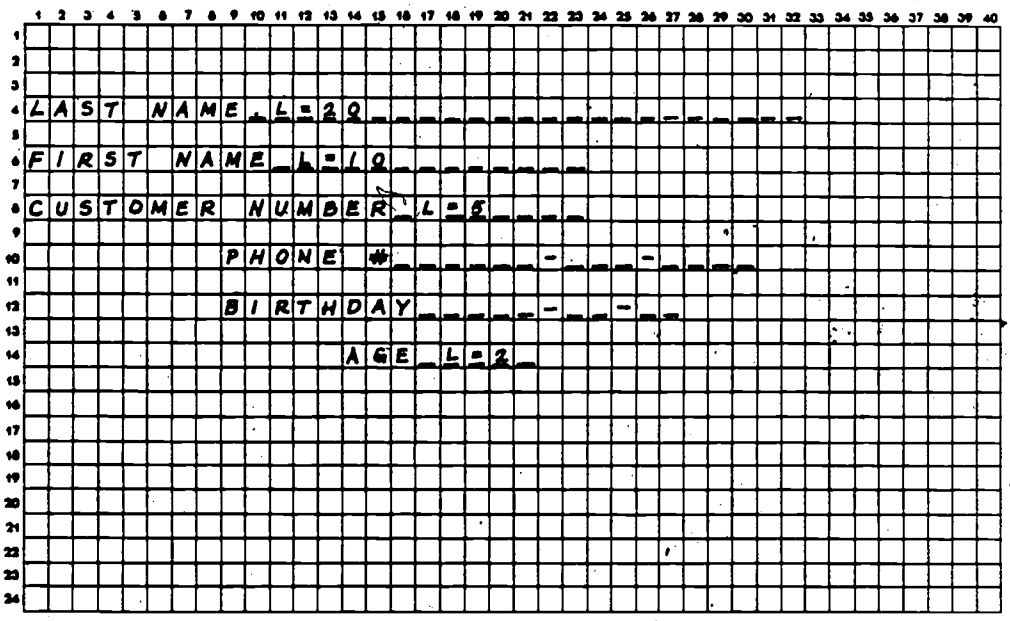
DB MASTER is unusual in that the first step in setting up a file is to assign passwords.

Passwords. The first step in setting up a DB MASTER file is to specify whether or not to assign passwords to protect the information in the file. There are three levels of passwords. The lowest level restricts a person to just reading the data in the file and, if one so chooses, some of the fields are hidden from the view of a person with this pass word. The second level allows the normal use of the data base which includes reading all of the fields, entering data, deleting records, and so on. The highest level allows one to change the other passwords. The availability of passwords is especially beneficial if the file contains confidential information such as personnel records.

*The material in parentheses are notes to those readers who will be using DB MASTER to follow the example.

Figure 1

D B MASTER SCREEN FORM LAYOUT SHEET *



FILE NAME TUTORIAL PAGE # 1

EACH FIELD HAS 2 LENGTHS ASSOCIATED WITH IT: 1. # OF CHARACTERS IN FIELD 2. MAX. # OF SPACES IT CAN OCCUPY ON SCREEN, INCLUDING $. —, (Y/N), ETC.

USE 2ND (GREATER) LENGTH IN DESIGNING YOUR FORM ABOVE. NOTE 1ST (SHORTER) FIGURE AT EACH FIELD TO REMIND YOU OF LENGTH TO ENTER INTO COMPUTER.

TO DETERMINE 2ND LENGTH, USE THE FOLLOWING RULES:

FIELD TYPE	# TO ADD TO 1ST LEN.	MINIMUM 2ND LENGTH	MAXIMUM 2ND LENGTH
ALPHANUMERIC	3	4	33
0 - 255	3	4	6
+ / — 32767	3	4	9
FLOATING POINT	3	4	11
DOLLAR / CENTS	4	8	15
YES / NO		2ND LENGTH = 9	
SOCIAL SECURITY		2ND LENGTH = 14	
TELEPHONE NUMBER		2ND LENGTH = 15	
DATE & AUTO DATE		2ND LENGTH = 11	

DO NOT USE LINES 1, 23 OR 24. DO NOT GO BEYOND CHARACTER POSITION #39.

*From DB MASTER Program Manual, Stoneware, Inc., San Rafael, CA

(For the purposes of this demonstration, the presenter should indicate N (no) passwords and press RETURN. The program will ask for the MASTER PASSWORD so that passwords can be added at a later date. Enter a word such as DEMO or the name of the file you are creating for the master password and press RETURN. Once this step is completed, a screen like the one in Figure 2 will appear; press RETURN to get to the file creation screen.)

Creating a file. With DB MASTER a file is created by designing the pages of the form for each record. Figure 2 shows that development is guided by a screen which has the rows and columns numbered for easy reference. At the bottom of this screen the various field types are listed for easy reference as each field is described. (Presenter should just mention each field type here. The specific characteristics will be demonstrated shortly.)

The first step in creating a file with DB MASTER is to decide how the file is to be organized; that is, what the primary key is to be. The primary key has the same relationship to a data base that a main entry card catalog has to a library. The "records" in the library are organzed by some shelf location code. This code consists of an indicator for the subject area, a code for author's last name, the publication date, a title code, the copy number, and so forth, until that "record" is uniquely identified. Similarly, the primary key is a list telling the program where to find each record in a data base. It may be as simple as a Social Security number or it may be more complex and, for example, consist of last name, first name, and birth date. The major characteristic of the primary key is that it uniquely identifies each record!

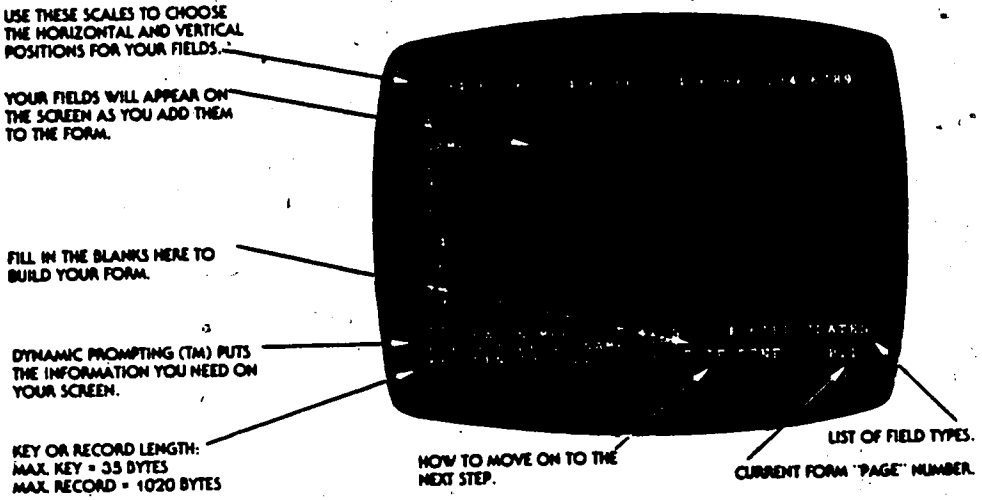
It is often the case that records are not entered in primary key order. For example, the students in grade one may be entered after the students in grade five even though their identification numbers come earlier in the sequence. The primary key is used by the program to find each record. The shorter the key the quicker the program will be able to operate. Of course, there are many ways to organize the records in a data base. In fact, they may be sorted according to any of the fields in a record. These other organizations are called secondary keys and are very helpful if the user wishes to review a group of records organized in a particular way, say, by zip code in alphabetical order by parent's last name.

(Choose a numeric field for the first field of the file. This will allow you to illustrate the use of a unique number as a primary key and to illustrate the three types of numbers that DB MASTER allows. Call this field STUDENT ID. Indicate that it will be a medium sized number, +/- 32767, choice 2. Place it in VERTical row 3 and HORIZontal column 4. Indicate that the MAXimum LENGTH is 4. Finally, since this number will be unique to each record it will not have a DEFAULT value, just press RETURN to indicate no default. At this point the program will

Figure 2

YOU CREATE A FILE BY DESIGNING ITS FORM. *

Place the fields you want wherever you want them on your screen:



*From DB MASTER Program Manual,
Stoneware Inc., San Rafael, CA.

ask you if you want to ADD ANOTHER FIELD TO the primary KEY. Answer N (no), press RETURN and procede with the entry of the other fields in the file.)

Once the primary key has been established, the next step is to lay out the rest of the fields in a record. These can be numeric, alpha numeric, or special fields like yes/no, social security, telephone, date, and so on. The fields of a record should be organized into logical sets and may be allocated to separate pages if necessary.

(See the "pages" shown in Figure 3 for suggestions about field type, location, and length. Some special feature of this program are illustrated by the fields shown on these pages. Familiarity with this program and its manual will increase your ability to demonstrate its special features and describe their utility to participants.)

Figure 3

Sample Form Pages

```
Page 1                                              Special Feature

12345678901234567890123456789012345678901234567890
1
2
3  STUDENT ID!.. ____              (NUMERIC, +/-32767, LENGTH 4,
4                                    Primary Key)
5  LAST NAME .. ____________________          (ALPHA, LENGTH-15)
6
7  FIRST NAME .. ____________________         (ALPHA, LENGTH-15)
8
9  SS # .. ___-__-____                  (social security number)
10
11 INS?(Y/N)___  DATE .. __-__-__              (VERT-11, HOR 20)
12
13 CURRENT SALARY $.. _____.__                    (MAX LENGTH-8)
14 RETIREMENT $.. _____.__                        (MAX LENGTH-7)
15   (and so on)
```

Page 2 Special Feature

```
12345678901234567890123456789012345678901
1
2  DOCTOR'S NAME .. _____                    (ALPHA)
                                              LENGTH-15)
3  TELEPHONE  .. (395) ___-____              (DEFAULT-395)
4
5  SPECIAL .. _____________________  (ALPHA, may be blank)
                                              LENGTH-25)
6  MEDICAL .. _____________________  (ALPHA, may be blank)
                                              LENGTH-25)
7  INFORMA .. _____________________  (ALPHA, may be blank)
                                              LENGTH-25)
8
9  (and so on)
```

The following are features illustrated in Figure 3:

- The name fields illustrate the typical alphanumeric field.
- The Social Security field shows how these numbers are automatically formatted.
- The insurance (INS?) field is a YES/NO field.
- On the same line is the DATE of enrollment field illustrating that two fields can be on one line as long as you do not overlap the fields and each one is given enough room.
- The current salary field illustrates the format for a dollar field.
- The retirement (RET) field is a computed field created by multiplying the current salary field times the percent of salary that is contributed to the retirement fund (e.g., 10%).
- The fields on page two are related to medical concerns. This is a simple example of the way a file might be organized with each page pertaining to a certain aspect of a person's record.
- The area code of the telephone field is defaulted to (395).
- Three fields are allocated for SPECIAL MEDICAL INFORMAtion. If due to lack of information there are many blanks in these fields DB MASTER will store those in an efficient manner so that excessive disk space is not utilized.

(After the fields on each page of the the form have been entered a CONT/S will indicate that the page is completed. The program will then give you an opportunity to see the page as it will appear to someone entering data or reviewing a record. If you want to make changes on the page you must press ESCape and follow the directions provided by the program regarding editing. When all changes are made, typing Ø and pressing RETURN will allow you to continue.

At this point you may ENTER the NUMBER for SECONDARY KEY. This option should be taken only if the field will be used often to search for records. With DB MASTER secondary keys can be added at any time. Since they slow down data entry, it is not appropriate to indicate any at this time. Therefore, ENTER 0, and press RETURN). See the program manual for a detailed discussion of secondary keys.

Now the program asks if you wish to ADD ANOTHER PAGE. Add page two. When you are finished with this part of the demonstration type N (no, you do not want to add another page) and press RETURN. Give the file a name (e.g., DEMO), press RETURN. The program displays page ONE, the record length and key length. Press RETURN to see the next page. The program will now ask if you wish to CREATE a FILE or START OVER. It is generally not necessary to show people the mechanical process of setting up the utility and file disks for this program although you should have experience doing it. Therefore, at this point press ESC to START OVER, to continue with the demonstration. The program asks if you are SURE you want to START OVER. Type Y (yes) and press RETURN. You can now start to create a new file by setting up passwords, or press the control and C keys at the same time to return to the beginning of the program. Press CTRL/C.)

Using a Data Base

The file shown in Handout 2 is the one to be used with the rest of this demonstration. It is called STUDENT DB. It has 39 RECORDS. Each record is 222 characters long. Due to the ability of the program to efficiently use disk storage space the primary key takes up two bytes of memory even though it is a 4 character integer. These are 33 fields in each record. Their names, whether they are part of the primary or secondary key, if they are read protected and the field type and length are all part of the file description printed in Handout 2.

(Pressing CTRL/C returns you to the title page of the program. PRESS RETURN TO CONTINUE. The screen in view should be the screen which gives you a choice of either inserting a Utility Disk to use an already existing file or pressing ESC to create a file. This time insert the utility disk for STUDENT DB or a file you have created and press RETURN. The program will display the Main Menu, shown in Figure 4, after you have typed in today's date to record the day that the most current work has been done with the data base.)

File Description Printout

STUDENT D B 070182

39 RECORDS IN FILE

REC.LEN.=182 KEY LEN.=2

FIELD NAME	PRIM KEY	SEC KEY	READ PROT	FIELD TYPE	LEN
STUDENT I D #	YES	NO	NO	INTGR	4
LAST NAME	NO	YES	NO	ALPHA	15
FIRST NAME & IN	NO	NO	NO	ALPHA	15
BUILDING CODE	NO	NO	NO	0-255	2
GRADE	NO	NO	NO	0-255	2
CLASS CODE	NO	NO	NO	0-255	1
OTHER PROGRAMS	NO	NO	NO	INTGR	5
SEX	NO	NO	NO	ALPHA	1
ETHNIC CODE	NO	NO	NO	0-255	1
PART. YEAR 1	NO	NO	NO	0-255	1
PRETEST YEAR 1	NO	NO	NO	NUMER	4
POSTTEST YEAR 1	NO	NO	NO	NUMER	4
PART. YEAR 2	NO	NO	NO	0-255	1
PRETEST YEAR 2	NO	NO	NO	NUMER	4
POSTTEST YEAR 2	NO	NO	NO	NUMER	4
PART. YEAR 3	NO	NO	NO	0-255	1
PRETEST YEAR 3	NO	NO	NO	NUMER	4
POSTTEST YEAR 3	NO	NO	NO	NUMER	4
PART. YEAR 4	NO	NO	NO	0-255	1
PRETEST YEAR 4	NO	NO	NO	NUMER	4
POSTTEST YEAR 4	NO	NO	NO	NUMER	4
PART. YEAR 5	NO	NO	NO	0-255	1
PRETEST YEAR 5	NO	NO	NO	NUMER	4
POSTTEST YEAR 5	NO	NO	NO	NUMER	4
PARENT LAST NAM	NO	NO	NO	ALPHA	15
FIRST NAME(S)	NO	NO	NO	ALPHA	20
STR/APT/PO BOX	NO	NO	NO	ALPHA	22
CITY	NO	NO	NO	ALPHA	10
STATE	NO	NO	NO	ALPHA	2
ZIP	NO	NO	NO	ALPHA	7
TELEPHONE:	NO	NO	NO	PHONE	12

Handout 2

Figure 4

```
= DB MASTER MAIN MENU =

FILE NAME:  STUDENT D B

CHOOSE FROM:

   (1)  DISPLAY/EDIT/DELETE RECORDS
   (2)  ADD RECORDS
   (3)  LIST RECORDS TO PRINTER
   (4)  LOAD OR CREATE SHORT FORM
   (5)  SET UP OR PRINT REPORT
   (6)  FILE MAINTENANCE
   (7)  LOAD OR CREATE NEW FILE
   (8)  CLOSE FILES AND EXIT

ENTER YOUR CHOICE (1 to 8):
```

Figure 4 shows the choices presented on the main menu of the DB MASTER program. Each choice is related to a particular way that the program can be used. The following discussion briefly describes what each choice means.

The first choice (DISPLAY/EDIT/DELETE RECORDS) is the one used most often, hence its placement at the top of the list. With this choice the file is entered and records can be examined one by one, or in predefined groups. Once the record or records to be displayed have been found, one can (1) change them if a student has moved from one school to another, (2) update them when next year's scores come in, or (3) delete the record if a student moves from the district.

ADD RECORDS, the second choice, is also used often. Once a file has been created each time a new record is to be included, number 2 is chosen.

There may be occasions when a complete printout of each record is desired. Choice 3 sends a whole file or selected RECORDS TO a PRINTER. This might be used to provide printed copies of records for students' cumulative folders, or simply as a backup in case of problems with a computer or the program.

A SHORT FORM is a portion of a complete record. For example, it may be that only new reading scores are to be added or parent address information is to be edited. Instead of sorting through the entire record of each student to find the part needed, a short form is created which displays only the part of the record of interest. Anything can be done with that part of the record that can be done with the whole record (e.g., display, edit, delete, add, list to printer).

Simply listing the records to the printer does not provide a very readable report. And there is no flexibility in the way the records are printed, except if a short form is used to identify just a part of the record to be printed. A good data base program will help to SET UP OR PRINT a REPORT by giving control over the way records are selected and sorted, and the way particular fields in a record are included in a report. It may even allow for the creation of new fields which are computed using existing fields, and for summary statistics relative to various fields.

FILE MAINTENANCE concerns the technical aspects of making backup copies of a file, and other housekeeping tasks. Two special features of DB MASTER which are accessed using the file maintenance module are the reblocking and long code description options. Reblocking reorganizes data to efficiently use disk storage space, and it can be used to make backup copies. Long code descriptions may be used to develop percentile to Normal Curve Equivalents (NCE) conversion tables or to assign names to coded information such as school building codes.

With the DB MASTER program, only one file can be used at a time. Therefore, if you wish to change files or to develop a new file, you make choice number 7 (i.e., LOAD or CREATE NEW FILE).

Number 8 is important because it allows the program to turn itself off rather than stopping in the middle of something and take out the disks. Allowing the program to CLOSE THE FILE AND EXIT, gives it a chance to insure that everything is done properly.

(These menu items need not be described in full detail, but the presenter should be familiar enough with them to answer general questions. File maintenance is the only substantive item not discussed directly in the remainder of this guide. "Load or create new files" has already been extensively discussed, and "close files and exit" is adequately covered in the brief description just provided. Presenters should become quite familiar with the File Maintenance option, since it contains important features such as reblocking files to conserve disk space and to make backup copies and the specification of long code descriptions. The topic of long code descriptions is discussed under "reporting" in the body of this guide and under "speeding data entry" in the Appendix.)

Display/Edit/Delete Records

(To select menu item number 1, type 1, press RETURN. You will have to insert the FILE DISKETTE into the disk drive specified by the program so that it can retrieve the record(s) you wish to display, edit, or delete.)

Selecting the first option on the menu, DISPLAY/EDIT/DELETE RECORDS, provides the opportunity to review and change records which already exist. After selecting the first option, a blank version of the first page of the record is displayed.

(The first screen contains a lot of information. At the top left is the name of the file. At the top right is the number of the page in the record that is displayed. In the middle are the fields on that page. At the bottom are the various display, edit, delete options. Press CTRL/F to enter the search mode.)

Searching for records. The symbols on the first line at the bottom of the Search Screen represent the various search criteria. That is, there are several ways to locate an individual record or particular group of records. The choices are: range, ^^ RNG, anything included between a set of letters or numbers; wild card, *WLD CD, anything that begins with a particular letter or number or combinations of letters or numbers; includes, ()INCL, anything that includes, not just begins with, a particular letter or number combinations of letters or numbers; any character, ?ANY, anything that has all of the other specified characters, and any character in the position replaced by the ?, e.g., V?N RYAN; relationals, < , =, >, < > , > =, <=, anything related as shown to a particular character, number, or letter.

When searches of different fields are combined, they will typically be considered as AND searches, that is, both characteristics have to be present for a record to be selected. You may also request an OR search. In this case, the program will find alternative records given the OR criteria.

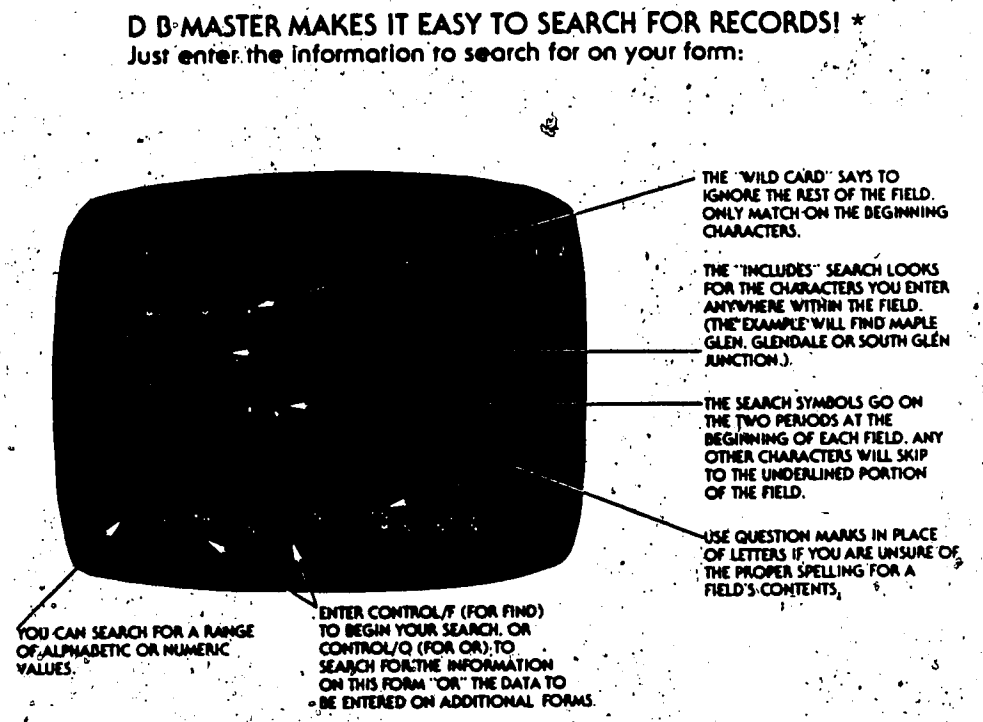
The last search option is a totals search; CTRL/Total. With the totals search, instead of showing the records, the program will clear the screen and display a running summary. As the records are found which match the criteria, the display will show the Count, Sum, Average, and Standard Deviation for the field "marked" with the Control/T. If the field is non-numeric, only the Count will be displayed.

(See the DB MASTER manual and the Appendix for more details concerning search criteria.)

Range search example. One search option that is very useful is the one used to find records within a certain range. The range is chosen by moving the cursor to the field that contains the

Figure 5

Search Screen



*From DB MASTER Program Manual, Stoneware Inc., San Rafael, CA.

information most important for that search. This might be last name, building code, parent's zip code, or whatever fact about the student is motivating the search.

(For the purposes of demonstration, simply request that the program find the students with ID numbers ranging from 200 to 210.

Type in ^ ^ over the periods in the Student ID # field, where the cursor is flashing. At the bottom of the screen this will appear:

= ENTER MINIMUM VALUE FOR RANGE = .

Type in 200, press RETURN. Then type in 210 after the word MAXimum which also appears at the bottom of the screen.

You may now select another search option, but instead, press CTRL/Find. The program will find record number 201. Move from record to record in this range by pressing Control/N until you get to record 206. At this point distribute Handout 3, student record.)

On the screen is the first page of a record 206 in the STUDENT DB file. It includes student demographic information (e.g., ID #, Name, Building Code). With the DB MASTER program, it is possible to set up records on a page-by-page basis.

(Display the record page by page by pressing RETURN.)

Page two of the record has participation and test data organized so that a student's history can be reviewed easily. By using the totals search option in relation to participation, one can quickly get a summary of participation.

Page two also provides room for listing pre and posttest scores. With DB MASTER it is possible to enter Normal Curve Equivalent Scores (NCEs) in the student record, and then have the program convert them to percentile scores when it comes time to print a report by using the long code description option in the file maintenance module.

As many program years as desired can be included in a record. Program years are given numbers rather than dates, so that old records can be purged and new ones inserted without having to change the field names. When a report is created, data can be labeled to specify calendar years corresponding to particular program years.

Once the correct record and page have been found, there are a number of options; namely, edit, print, or return to the main menu. The print option was used to produce the record shown at the top of Handout 3.

Entire Record

STUDENT I D # - 206
LAST NAME - GRANT
FIRST NAME & INITIAL - JAMES
BUILDING CODE - 2
GRADE - 4
CLASS CODE - 4
OTHER PROGRAMS - 4
SEX - M
ETHNIC CODE - 1
PART. YEAR 1 - 1
PRETEST YEAR 1 - 18.9
POSTTEST YEAR 1 - 21.8
PART. YEAR 2 - 1
PRETEST YEAR 2 - 17.3
POSTTEST YEAR 2 - 20.4
PART. YEAR 3 - _
PRETEST YEAR 3 - ____
POSTTEST YEAR 3 - ____
PART. YEAR 4 - _
PRETEST YEAR 4 - ____
POSTTEST YEAR 4 - ____
PART. YEAR 5 - _
PRETEST YEAR 5 - ____
POSTTEST YEAR 5 - ____
PARENT LAST NAME - GRANT
FIRST NAME(S) - SUSAN
STR/APT/PO BOX - 2628 NE WASHINGTON AVE
CITY - CENTENNIAL
STATE - OR
ZIP - 94733
TELEPHONE: - 619-223-2567

Short Form

STUDENT I D # - 206
BUILDING CODE - 2
GRADE - 4
PART. YEAR 1 - 1
PRETEST YEAR 1 - 18.9
POSTTEST YEAR 1 - 21.8
PART. YEAR 2 - 1
PRETEST YEAR 2 - 17.3
POSTTEST YEAR 2 - 20.4

(By pressing the escape key (ESC), the EDIT mode is selected. The screen will change so that at the top left the edit function is noted.)

Editing and deleting records. This program offers some quick ways to edit records. For example, if a student has now moved to the fourth grade, by simply pressing CTRL/I (for increment), 1 is added to the value in the grade field.

A record can also be deleted at this point by pressing CTRL/D. (Don't do it!)

Pressing CTRL/S saves the editing change. Pressing CTRL/V voids the editing change.

(Press CTRL/V and void the edit. The program returns to the generic display. From there it is possible to print the new record, find another record, or call up the main menu. Press CTRL/C to return to the main menu.)

Add Records

In most cases, new records are continually added to a file, even as others are deleted. Selecting choice 2 on the main menu activates the ADD RECORDS mode.

(Enter 2 and press RETURN.)

When entering this mode, a choice is given of either printing or not printing the new record. If entering a number of new records, it slows things down to have each one printed. Remember that choice number 3 on the main menu is LIST RECORDS TO PRINTER. This option can be used to print all new records once they have been entered.

(Type NO to PRINT RECORD, and press RETURN.)

When starting to add records, the first page of the last record entered will be displayed along with the date when the last entry was made. At the bottom, three choices are given, namely, adding records, changing defaults, or returning to the main menu.

(Choose CHANGE DEFAULTS ADD RECORDS by pressing ESCAPE. Type Yes for LAST RECORD DEFAULT MODE?)

Time can be saved when entering records by having those fields that will always have the same information completed when the data base is created. Default values set when the file is created are permanent. However, values can be changed by simple typing in the appropriate value for a given record. Temporary default values are used to enter a group of records that all have the same information in some fields.

The choice CHANGE DEFAULTS? sets temporary defaults. They are temporary because they can be reset for the next group of records. For example, when entering all of the fourth grade Chapter 1 math students, in building 107, in class 8, temporary values can be set so that there is no need to enter these values for each student. When the next group is added, e.g., class 9, this value can be changed.

(Add a new person to the file. You can later delete the entry. A tutorial on temporary defaults is included in the Appendix under the section on Speeding Data Entry. Also, see the program manual for a discussion of the reasons for using the last record default mode. Press CTRL/C to get back to the main menu.)

Short Form

The short form, like setting temporary defaults, is a way to speed up the adding of records. This is choice number 4 on the main menu.

(Enter choice number 4. Press RETURN.
Enter N to CREATE NEW FORM and press RETURN. Put the program diskette into drive one. The following will appear on the screen:

```
=   LOAD SHORT FORM   =

 0 NORMAL FORM
 1 DATA ENT. YR 1-2
 2 STUDENT INFO  )
```

For example, after finishing the first year of a program, it is time to enter data from the second year. It is likely that parts of students' records, such as grade, will need to be brought up to date. There also might be new information to be added, such as participation and test scores. It would be time-consuming to have to wade through all of the information on the student demographics, participation and test score pages, just to add one year's worth of information. The quick solution is to create a Short Form which has just the fields needed.

(To demonstrate the use of a short form to add records, ENTER YOUR CHOICE: 2, and press RETURN)

When the choice of short form is entered, the program returns to the main menu. This means that it is now possible to display, edit, delete, or add records using just the fields of the short form. For example, to add records using the short form, one would choose option 2.

(Enter 2, press RETURN. Enter N, press RETURN so that new records are not printed. Handout 3 contains an example of a short form from student #206. The screen will display the short form of the last student added to the data base as is the case when adding records with the normal form.)

Each short form must include the primary key for the file, so that individuals can be identified. In the case of this file, it is the Student ID #. All of the other fields can change from one year to the next. As when adding information to the full record, temporary default values can be created to enter all students in building 3, grade 1, class 3.

By tying each short form to the primary key, DB MASTER is able to emulate a hierarchical data base. Each short form can be thought of as a separate "file" as in a true data base. By using the short forms, one can just work with the "student information" file, the "Data Entry for Year 1-2" file, and so on for data entry, file maintenance, and reporting. Each short form must have the primary key on it so that the program knows which larger record the information is associated with. In this way, sub-parts of the larger file can be called up using the short form mode, and the sub-file can be called up together to display all of the information about one record. The DB MASTER manual has a thorough discussion of how to set up a file to emulate a true data base.

The increment command (CONTROL/I) can be used to add records if ID # default value is set at the first record to be added. Using the change default value option for ID # and the other standard data for this set of students, most of the data entry for updating these records can be eliminated.

(Press ESC to CHANGE DEFAULTS and indicate Y to the question, LAST RECORD DEFAULT MODE? The last record entered will appear on the screen. The values in this record can be used or a new set of defaults can be specified. For example, if a new set of first graders are to be entered into the data base, enter 500 for Student ID #, a last name and first name, 5 for Building Code, 1 for Grade, 103 for other program, M or F for sex, and 1-5 for ethnic code.

Press CTRL/A and that record will be added and a new form with the default values will appear. Increment the ID # by pressing CTRL/I so that it becomes 501 and then enter new data as before skipping all of the defaulted values by simply pressing RETURN.

You may want to go back to the normal record at this point, to show people that the new data are in fact included in the whole record. To do that (1) press CTRL/C to return to main menu, (2) then select 4, LOAD OR CREATE SHORT FORM, and (3) select 0 Normal Form. Then choose number 1 from the main menu and press RETURN. Find the record with ID #500. This record with the new data will then be displayed.)

List Records to Printer

Printing out records, choice number 3, results in the printout shown in Handout 3. When this option is chosen, the program asks for the same search criteria as when displaying records. This type of "hard copy" is acceptable for informal purposes, but it is not very easy to read, and the record is not organized as well as it could be. That is the function of the report mode, which is described next.

Generating Reports

Setting up sample reports which typify the kinds of reports that you wish to produce with your data base is the next development step. There are four aspects of a report that must be considered, namely, the page format, the data format, the select format, and the sort format. Handout 4 shows these four sub-formats and their related features.

The REPORT LAYOUT FORM shown in Handout 5 contains all of the information needed to develop the report used as an example in the following discussion. It is important to use the REPORT LAYOUT FORM since report generation is a time consuming and tedious job, especially if you have to start over again and again as a result of careless mistakes. At the top left of the REPORT LAYOUT FORM are listed the

REPORT TITLE: 82-83 IMPACT
FILE NAME: STUDENT D B PAGE FORMAT: OTHER 82-83 IMPACT
DATA FORMAT: 82-83 IMPACT (1) STANDARD.

The report title, page format and data format all have the same name so that they may easily be identified as belonging together.

(The first step in preparing a report is to select main menu item 5, SET UP OR PRINT REPORT. Enter 5, press RETURN. The screen shows the following: CREATE A NEW REPORT?(Y/N). If a report has already been created that you want to use, you would answer No. For example, if you simply want to print a copy of the 82-83 IMPACT report. If this is your choice enter N, press RETURN. See the section on printing reports for further instructions.

If you wish to try your hand at creating a report, type Y and press RETURN. Use the REPORT LAYOUT FORM, Handout 5, and the following discussion as a guide to your work. A blank copy of the REPORT LAYOUT FORM is included at the end of the Appendix.)

Report Sub-Formats Overview

PAGE FORMAT	DATA FORMAT	SORT FORMAT	SELECT FORMAT
page numbering	comment lines	sort fields	record chacteristics
report dating	column titles	subtotal break fields	(range, includes, starts with, relationals, AND / OR conditions)
lines/page	computed fields	page break fields	
continuous/ single sheet	data fields	(column totals)	
lines between records	comment fields		
labels	horizontal sub- & grand totals		
	record numbering		
	code fields		
	report width		

Handout 4

Report Layout Form

Report Layout Form

Report Title: 82-83 IMPACT — Date: 12/21/83

File Name: STUDENT DB	Page Format: Other 82-83 IMPACT	Date: (Y)/N	Rpt. width: 79 space btwn sec. 2	Page 1 of 1
Data Format: 82-83 IMPACT	(1) Standard	Page#: (Y)/N	Lines/pg: 56 Tot space/pg 66	Pause btwn pg: Y/(N)

Comment lines 1: CENTENNIAL@

Headings 2: SCHOOL DISTRICT@

Footnotes 3:

(@ if you do not want a line centered)

4: 1982-1983 CHAPTER I PROJECT IMPACT SUMMARY

5

6

7

8

9

Column Titles (up to 9 lines)

	ID #	N: PRE-POST	PRETEST %'ILE	NCE	POSTTEST %'ILE	NCE	GAIN			
Comp field formula							POSTTEST YEAR 2 - PRETEST YEAR 2			
Field #	1	225	13	14	14	15	15	201	(15-14)	4 BLDG 5 GRADE
Tab	0	2	0	5	3	5	3	4		CODE
Print width	5	2	3	2	4	2	4	5		
Long code descr.	N	N=	N	Y	N	Y	N	N		Y / N
Hor. Subt. #	N		N	N	N	N	N	N		
# after	ø		ø	ø	1	ø	1	1		
Col. Subt. / Tot.	N		Y	Y	Y	Y	Y	Y		
Sort:	N		N	N	N	N	N	N		Y / Y
break										Y / Y
page break										Y / Y
Select:	N		N	N	Y	N	Y	N		
Criteria:					>ø		>ø			
Print Options	STATISTICS									

Handout 5

25

Page Format

The screen displays the first of four sub-formats: PAGE FORMAT.

(The options under the page format are as follows:

= CHOOSE PAGE FORMAT =

1 STANDARD PAGE
2 SCREEN REPORT
82-83 IMPACT)

The STANDARD PAGE, like all of the other master report sub-formats, is the one automatically put there by the program. To tailor the page to meet the needs of a particular report one has to create a new format. Formats are saved for later use, therefore, one could choose a previously developed format for a new report.

(If you wished to use a previously developed format you would enter its number from the list and press RETURN. Then you would be given the choice to: PRINT THIS FORMAT, REPLACE THIS FORMAT, CHOOSE ANOTHER FORMAT, or, MOVE ON TO NEXT FORMAT. Printing the format would result in a summary like the ones shown in Handout 6. Replacing a format is the only way to remove it from the list. Choosing another format takes you back to the format list. The move on option allows you to include this sub-format in a larger report format and to go to the next sub-format type.

Since we do not want to use an already existing format, enter Ø and press RETURN to CREATE NEW FORMAT.)

There are essentially three kinds of reports: printed reports, screen reports, and labels. It is necessary to have different report sub-formats for printed and screen reports since the size of the printed page is typically wider than the 40-column screen. Label formats are a special case because of their unique layout.

(Since this is not a LABEL FORMAT, type N, press RETURN.

The screen shows a diagram of a report page with each of the major parts set off by dashed lines. As you create a report the program will show you where the information will appear through the use of a flashing cursor as with the first piece of information in the PAGE FORMAT, the DATE. Enter the page format information described in the next paragraph.)

The PAGE FORMAT of a printed report is shown in Handout 6. This information is summarized at the top right side of the REPORT LAYOUT FORM, Handout 5. The date is on the page so that it is clear when the report was printed. This helps to distinguish one draft from another. The pages of the report are to be numbered since it is likely to be a multi-page report. Because the

PAGE FORMAT => 82-83 IMPACT

PUT DATE ON PAGE?	YES
NUMBER PAGES?	YES
SPACES BETWEEN RECORDS =	2
PRINT LINES PER PAGE =	56
TOTAL LINES PER PAGE =	66
PAUSE BETWEEN PAGES?	NO

SORT FORMAT => 82-83 IMPACT

SORT #	FIELD NAME
1	BUILDING CODE
2	GRADE
3	CLASS CODE

SUBTOTAL BREAK ON 1ST 2 SORTS

PAGE BREAK ON 1ST 2 SORTS

SELECT FORMAT => 82-83 IMPACT

FIELD NAME	OPERATION & TEST VALUE
PRETEST YEAR 2	GREATER TH>0
POSTTEST YEAR 2	GREATER TH>0

entries will be rather short, there should be enough room between them so that they are easy to read. Therefore, 2 blanks between records are inserted. This is the only characteristic that differentiates the 82-83 IMPACT report page format from the STANDARD PAGE format which has only 1 blank between records.

When using continuous feed paper, the program should not pause between pages. The standard 56 print lines and 66 total lines per page are indicated since we will use 8 1/2 by 11 inch paper. This will set up each page at the same place on the continuous paper.

(When all of the above information has been entered the program will ask you to provide a NAME FOR THIS FORMAT. Type in IMPACT1 and press RETURN. Then the screen will show the page format for the report as illustrated in Handout 6. If the information shown is OK, then type Y and press RETURN. The program will save this format and move on to the CHOOSE DATA FORMAT screen.)

Data Format

The screen displays the second of the four sub-fomats: DATA FORMAT

(The options under the data format are as follows:

= DATA FORMAT =

1 ALL FIELDS
2 82-83 IMPACT

The details of the data format for a 82-83 IMPACT report are shown in Handout 7. This printout was obtained by selecting the 82-83 IMPACT data format from the list and then choosing the print option. If a preexisting data sub-format is to be included in a larger report format, one would simply type its number from the list, press RETURN and then move on to the next sub-format.)

The REPORT LAYOUT FORM shows how the data format details are oganized in planning the report.

(Enter 0, to CREATE NEW FORMAT, Press RETURN. In this way you can take people step by step through the process of setting up the data format.)

Report width. The cursor is at the bottom of the screen indicating a need to specify the width of the report. For a normal page the report width is set at 79 characters. A screen report can only be 39 characters wide and a large print report can be up to 132 characters wide.

(Since a 79 character wide report is correct, simply press RETURN. Type Y, since we WANT COMMENT LINES, and press RETURN.)

DATA FORMAT => 82-83 IMPACT

REPORT WIDTH = 79

COMMENT LINES:

CENTENNIAL
SCHOOL DISTRICT

1982-1983 CHAPTER I PROJECT IMPACT SUMMARY

COLUMN TITLE LINES:

```
          N:PRE-  PRETEST          POSTTEST
I D #     POST    %'ILE   NCE      %'ILE   NCE      GAIN
```

COMPUTED FIELDS:

C-201: POSTTEST YEAR 2 - PRETEST YEAR 2

. . . . DATA LINE #1 . . . .

FIELD #1: STUDENT I D #	TAB=0	LENGTH=5
FIELD #2: "N= "	TAB=2	LENGTH=2
FIELD #3: PART. YEAR 2	TAB=0	LENGTH=3
FIELD #4: PRETEST YEAR 2 PRINT CODES	TAB=5	LENGTH=2
FIELD #5: PRETEST YEAR 2 1 DIGITS AFTER DEC.	TAB=3	LENGTH=4
FIELD #6: POSTTEST YEAR 2 PRINT CODES	TAB=5	LENGTH=2
FIELD #7: POSTTEST YEAR 2 1 DIGITS AFTER DEC.	TAB=3	LENGTH=4
FIELD #8: COMPUTED FIELD #1 1 DIGITS AFTER DEC.	TAB=4	LENGTH=5

Comment lines. Comment lines are the titles and footnotes of reports. As shown in Handouts 5 and 7, the comment lines for the illustrative report specify the school district and the title of this report (Handout 8).

(When a comment line goes beyond 33 characters, the program beeps when the 34th character is reached. You must press RETURN to continue. Notice how the program shows the six characters preceeding the 34th character so that you don't loose your place. In order to make the name of the school district left justified a "@" is included at the end of the line. If this symbol is not included the line will be automatically centered. If a comment line is less than the 79 characters allowed you must press RETURN until you get to the end of the allocated space shown on the screen. The program will then ask if you want to ADD ANOTHER COMMENT LINE? Continue to add lines until you have reproduced the header shown in the Handouts. When the last line is entered type N in response to the add a comment line question, and press RETURN.

You are now given an opportunity to edit the comment lines. Read through the comment lines by pressing CTRL/C to display the next window section. If there are errors, enter the number of the line to be edited. That line will be erased and you can type it in again. When you are finished editing, or if there are no errors enter N, press RETURN.)

The program now asks which lines go at the top of the page. The three comment lines shown in the Handouts go at the top of the page. Any remaining lines would appear as footnotes at the bottom of the page. Type 3, press RETURN.)

Column titles. After setting up comment lines, the next question is, DO YOU WANT COLUMN TITLES? These are the headings that go over the data in the report.

(It is usually best to use abbreviated versions of field names to identify the data. For example, the column titles in the illustrative report are I D #, N: PRE-POST, PRETEST %'ILE NCE, POSTTEST %'ILE NCE, and GAIN.)

The process for specifying column titles is the same as for setting up comment lines. Their exact location must be determined beforehand to avoid errors at the time of entry. The REPORT LAYOUT FORM is really valuable for this purpose.

(Enter the column titles as shown on the REPORT LAYOUT FORM. Notice that there are two lines of titles. With this program titles can be nine lines long which means it is possible to do vertical titles if columns are very narrow. Even slanted vertical titles are possible. Continue to add column titles until you have reproduced those on the layour form. Type N and press RETURN when you have entered the last line. Edit if necessary. The type Ø, no more edits, and press RETURN.)

Impact Summary Report Example

11-17-83 PAGE 2

CENTENNIAL
SCHOOL DISTRICT

1982-1983 CHAPTER I PROJECT IMPACT SUMMARY

BUILDING CODE: 1 CREST DRIVE
GRADE: 4

I D #	N: PRE-POST	PRETEST %'ILE	PRETEST NCE	POSTTEST %'ILE	POSTTEST NCE	GAIN.
111	N= 1	10	23.0	12	25.3	2.3
112	N= 1	14	27.2	16	29.1	1.9
115	N= 1	7	18.9	8	20.4	1.5
157	N= 1	19	31.5	21	33.0	1.5
159	N= 1	11	24.2	10	23.0	-1.2
T O T A L S FOR 4	N= 5		*4.8		*0.8	6.0
AVERAGE FOR 4	N= 1		25.0		26.2	1.2
STANDARD DEV. 4	N= 0		4.2		4.5	1.2
T O T A L S FOR CREST DRIVE	N= 11		*8.4		*2.6	34.2
AVERAGE FOR CREST DRIVE	N= 1		27.1		30.2	3.1
STANDARD DEV. CREST DRIVE	N= 0		5.3		6.7	3.3

Handout 8

Computed fields. The next question is, DO YOU WANT COMPUTED FIELDS? You can use computed fields, for example, to calculate students' gains from pre to posttest. It is possible to create computed fields as part of a record. But, the decision was made to save disk space in terms of the total length of each record by making gain scores report features. The formula for each computed field is included right after the column title on the REPORT LAYOUT FORM, Handout 5, and is noted on the DATA FORMAT, Handout 7, printout.

(Type Y, press RETURN to indicate that computed fields are desired. Each field in the file is listed on the screen as follows:

```
        =   SET UP PRINT FIELDS   =

    1 STUDENT ID#          18 POSTTEST YEAR 3
    2 LAST NAME            19 PART. YEAR 4
    3 FIRST NAME & IN      20 PRETEST YEAR 4
    4 BUILDING CODE        21 POST TEST YEAR 4
    .                      .
    .                      .
    .                      .
```

Press CTRL/N to display the next page of fields.)

Computed fields are added to a report by indicating how they will be formed. For example, the gain scores in the report are computed by the pretest score from year 2, field 14, being subtracted from the posttest score from year 2, field 15. This gain score is created by entering

```
FIELD # (Q=CONSTANT) 15    + - * / OR ^ -
FIELD # (OR ) 14     CONSTANT _____________
```

In this case no constant is used but the program allows this option.

When the above information is entered the list of fields is altered to included 201 POSTTEST-PRETEST. This field is in inverse video (i.e., dark letters on a light background) so that it is easily recognizable.

By pressing the Control, CTRL, and N keys at the same time one can move from screen page to screen page to see all of the fields available. Notice that there are some other fields in reverse video beside FIELD 201. They will be discussed as we continue to create the report.)

Setting up print fields. Once any computed fields are included in the list of available fields we can begin the actual process of entering the fields to be printed. This is the message that appears on the screen.

The screen also shows that it is possible to switch between the REPORT FORMAT, by pressing CTRL/D, and the FIELD LIST: we can move from one page to the next page by pressing CTRL/N.

In order to SET UP PRINT FIELDS you need to specify the

FIELD NUMBER (0 IF DONE) ___
TAB ADVANCE (0-99) __ PRINT WIDTH __.

(See Figure 6, SETTING UP PRINT FIELDS.)

The information for setting up print fields appears on the REPORT LAYOUT FORM immediately following the computed field formula and is summarized on the DATA FORMAT printout, in Handout 7.

(Press CTRL/D to display the windows of the report format. At the top of the screen will appear the COLUMN TITLES that were entered before. In the middle of the screen is the space in which DATA LINES are entered. At the bottom of the screen are the instructions and the flashing cursor.)

Here again, it is very important that advance planning take place so that information, such as the sequence of fields to be printed, the tab advance for each field, and the print width needed to accomodate the data in each field, are readily available.

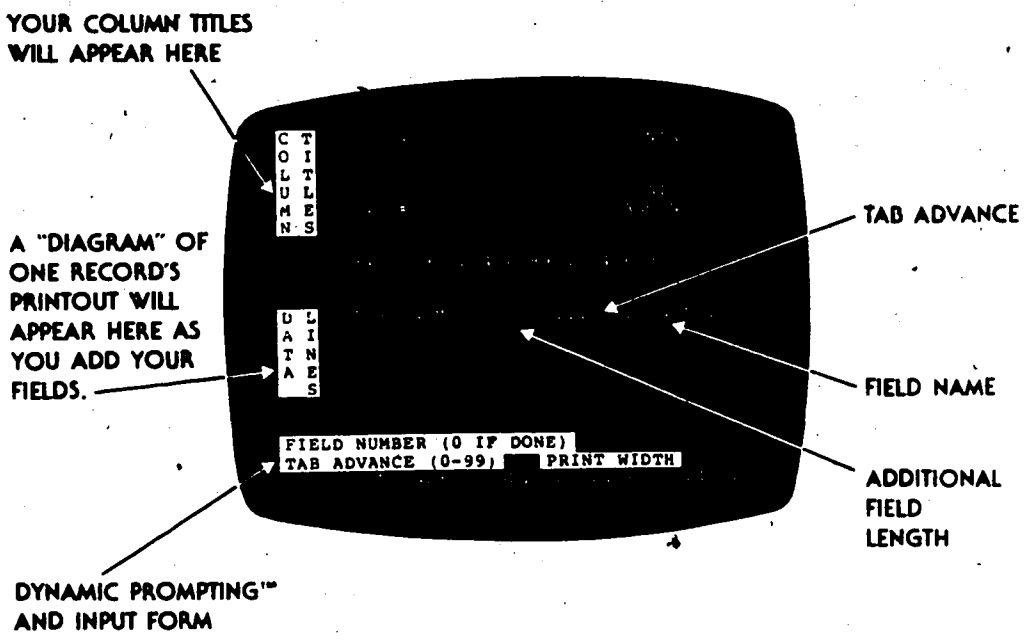
Once this basic information about each print field is entered, the next choice is whether or not to PRINT LONG CODE DESCRIPTIONS? Long code descriptions may be used to convert short coded information of up to 5 characters to full descriptions. For example, they may be used to convert abbreviations to their full spelling (e.g., CA = California), to relate a number to a name (e.g., SCHOOL CODE: 102 = Lincoln Elementary), or to convert one number to another, for example, Normal Curve Equivalents (NCEs) to percentiles. In the report page shown in Handout 8 the PRETEST NCE of 35,1 has been converted automatically by the program to a %'ILE of 24. Long code descriptions can make data entry easier and reports clearer. Their use will be discussed shortly. A tutorial on long code descriptions is included under the topic, speeding data entry in the Appendix.

(Since long code descriptions are not required for the I D # field, simply press RETURN.)

Next the program inquires about horizontal subtotal and grand total fields, HORIZONTAL SUBTOTALS (Ø OR 1-5). Zero (Ø) means no sub-totals. The numbers 1-5 refers to the optional fields for this purpose. They provide the summation of the data in the rows of a report just as the column subtotals and totals provide this option for columns.

Figure 6

SETTING UP YOUR PRINT FIELDS:*



*From DB MASTER Program Manual,
Stoneware Inc., San Rafael, CA.

(Since no horizontal totals are desired for this field simply press RETURN. Do the same for # OF DIGITS AFTER DECIMAL PT. Type N in response to the question, PRINT COLUMN SUBTOTALS AND TOTALS? Then press RETURN.)

(When all of the information about a print field has been entered, the report format is altered to include the field. The FIELD NUMBER prompt again appear on the screen in preparation for entering the next field into the report format.

The next field is a comment field. Comment fields are statements that appear within the body of a report, for example, the comment "N=" in the report page in Handout 8. This comment is intended to clarify the meaning of the data under N:PRE-POST. In order to insert a comment field, field 225, ADD A COMMENT, is requested.

Once the comment is entered by specifying the FIELD NUMBER, TAB ADVANCE, PRINT WIDTH and the COMMENT itself, it will appear in the field list as field 225 so that it can be used again. Up to 5 comment fields may be included in a report format by requesting subsequent ADD A COMMENT fields.)

Next, the field that will supply the "N" is added. This is the participation field, number 13, PART. YEAR 2. It is entered with no tab advances so that it will be as close to the "N=" as possible. And, its width is 3 so that there will be enough space for up to 999 paticipants to be totaled at the end of this column. There will be no horizontal totals, and no decimal places, but there will be column sub-totals and totals.

Another way to get a total of the number of cases included in a report is to use the last two optional fields in the print fields list. These are used to request the program to number records as it selects them for the report. If this feature is requested, the program will provide the subtotal and/or total number of records included in a report.

(The next field in the report shown in Handout 8 is PRETEST %'ILE. For the purpose of the report these data are long code descriptions of PRETEST YEAR 2 data, field 14. That is, in the report the program displays percentiles that are automatically converted from the NCEs entered during data entry into field 14 of each record. This conversion is accomplished by setting up a conversion table using the file maintenance option in the main menu. There is a tutorial on long code descriptions in the Appendix.

(The percentile field in the report is set up as follows. FIELD NUMBER 14 is entered along with the TAB ADVANCE of 2 and PRINT WIDTH of 2. This will provide enough room for each value in the body of the report and yet truncate the totals that appear at the bottom of the report page shown in Handout 8 since TOTAL percentile has no meaning. A Y is entered to indicated that we want to PRINT LONG CODE DESCRIPTIONS. No horizontal subtotals or

decimals are required so just press RETURN. However, column subtotals and totals are to be printed as part of the statistical summary of the report so answer Y to this query.)

The PRETEST NCE field is the next field to be entered in the report. It is placed under the appropriate heading in the same manner as the above fields except, of course, this is not a long code description field since we want the NCEs that were originally entered when each record was created. In addition, this field should have space for 1 digit after the decimal point and should allow a width of 4 characters including the decimal point.

The POSTTEST %'ILE and NCE fields are entered by making the same choices as with the PRETEST fields. (See Handouts 5 and 7.)

The last field in the report goes under the GAIN column. This field is the computed field that was created at the start of the report format generation process, field 201 POSTTEST-PRETEST.

(You should refer to the REPORT LAYOUT FORM and the DATA FORMAT printout for the specific tab settings and widths for this field.

Once the first line of data is entered you should select Ø to indicate that there are no more lines to be included in this report. Then you have the opportunity to edit this line by indicating the report field to be changed. Notice that each field included in the report format is numbered. This is the number to select, not the number from the list of fields. When editing is completed a Ø is entered to indicate no more editing. Then a NAME FOR DATA FORMAT is requested. Call this format IMPACT1 and press RETURN. The program now moves on to the sort sub-format.)

Sort Format

As you can see from the printout in the middle of Handout 6, the 82-83 IMPACT report was sorted first by BUILDING CODE and then by GRADE. This will give a grade by grade summary and a building by building summary. Class summaries could also be provided by having CLASS CODE as the third sort field. Notice that just above the column titles on the report shown in Handout 8 the long code description, or the buiding name, is listed along with the code of the building being reported in this part of the report.

(To create a new sort format, type Ø and press RETURN when the CHOOSE SORT FORMAT SCREEN appears. You will be asked to

ENTER SORT FIELDS IN ORDER - MAJOR
SORT FIRST. LIST OF SORT FIELDS:

As you select fields they are listed on the screen.

Next you have to decide on which fields you want the program to break or start over again.)

In order to know when to start and stop new pages or sections of the report, and when to calculate subtotals and totals, the program needs to know when to BREAK. The SORT FORMAT shown in Handout 6 indicates that both SUBTOTAL and PAGE breaks will occur on the first 2 sort fields, that is, both sort fields in this report.

The report in Handout 8 illustrates the effect of these sort characteristics on a report. Page 2, the one shown in the Handout, is the grade 4 summary page and the CREST DRIVE summary page. A new page is started each time the data from a new grade are reported. When all of the data have been reported the program provides a subtotal for that grade and then begins a new page for a new grade. When all of the data for an entire school are reported the program summizes the last grade reported and then provides the whole school subtotals, as in Handout 8. If an entire district is included in a report this pattern of page breaks and subtotals will continue for each grade and each school until all the data and subtotals are reported. Then a grand total is reported as shown in Handout 9.

Handout 9 shows a report which consists only of the subtotals and a grand total for a district. That is, none of the student data for each grade are reported. This report is created just before printing. The decisions to be made at that point will be described in just a moment.

(To answer the question,

HOW MANY SORT FIELDS DO YOU WANT SUB-TOTAL BREAKS ON (STARTING WITH MAJOR SORT FIELD)?

simply type 2, and press RETURN, so that both sort fields will be included, that is, so that the program will provide summaries for each grade and school. To answer the question,

HOW MANY OF YOUR SUB-TOTAL BREAKS DO YOU WANT TO ALSO BE PAGE BREAKS (STARTING WITH MAJOR SORT FIELDS)?

again type 2, and press RETURN so that each grade's and each school's report will start on a new page.

Then enter a name for the format, e.g., IMPACT 1, and press RETURN, to move on to the last sub-format.)

Summary Only With Statistics
Report Example

11-17-83

CENTENNIAL
SCHOOL DISTRICT

1982-1983 CHAPTER I PROJECT IMPACT SUMMARY

BUILDING CODE: 2 WILLOW AVENUE
GRADE: 4

I D #	N: PRE-POST	PRETEST %'ILE	PRETEST NCE	POSTTEST %'ILE	POSTTEST NCE	GAIN
T O T A L S FOR 4						
	N= 6		*4.7		*0.4	5.7
T O T A L S FOR WILLOW AVENUE						
	N= 10		*9.1		*6.4	7.3
G R A N D T O T A L S						
	N= 21		*7.5		*9.0	41.5

Handout 9

Select Format

The choice of particular records for inclusion in a report is accomplished through the SELECT FORMAT just as the DISPLAY/EDIT/DELETE main menu option provided a mechanism for selection records from the file for the purposes of reviewing,changing, or deleting them. In fact, the same procedure is used.

(To CREATE NEW FORMAT, type Ø, and press RETURN. The screen will now display the first page of the screen form with the five types of select options listed at the bottom of the screen:
^^ RNG is RANGE; * WLD CD is WILD CARD; ( ) INCL is INCLUDES;
? ANY is ANY CHARACTER; and < , = , > , etc. are RELATIONALS.

To recreate the select format shown in Handout 6 move the cursor to the second page of the form by pressing the control and N keys at the same time. Then move down to the PRETEST YEAR 2 field on page two by pressing return. In order to select those students who have complete data indicate >Ø for both this field and the POSTTEST YEAR 2 field. Since these are the only two criteria to be used to select records, next press the control and the F keys together to indicate you are Finished. You are then given the choices; RETURN to go to the NEXT PAGE, CTRL/Ø to add an OR conditional, and CONTROL/S to SAVE the CRITERIA. Press the control and S keys together to save the criteria. Then ENTER NAME FOR SELECT FORMAT, i.e., IMPACT1, and press RETURN.

The screen now shows this message:

THESE COMBINED FORMATS MAY BE STORED FOR REPEATED USE.

STORE FORMATS?(Y/N)

Type Y and press RETURN so that you can later generate a report using the page, data, sort, and select formats you just created. Name the MASTER FORMAT, IMPACT1 and press RETURN. Since a title for this report was created when the three comment lines were designated as headings, it is not necessary to use the master format, IMPACT1 as the REPORT TITLE. Therefore, FOR NO TITLE, PRESS SPACE BAR Ø RETURN. Then answer No to the question, PRINT THIS REPORT NOW? We will print the report by going back to the MAIN MENU and selecting the print a report option.)

This completes the generation of sub-formats report. We now move on to the actual printing of a report.

Printing Reports

Once a master report format has been created from a set of sub-formats, it is a relatively simple task to print a report. There are just a few characteristics to specify.

(From the MAIN MENU select option 5, SET UP OR PRINT REPORT, by typing 5 and pressing RETURN. Respond with No to the question, CREATE NEW REPORT. The program will then LOAD THE NEXT MODULE, and display the SELECT REPORT FORMAT menu. To select the IMPACT1 report, type its number and press RETURN. At this point you can PRINT the REPORT by pressing RETURN, DELETE the report format by pressing CTRL/D, CHOOSE AGAIN by pressing CTRL/D, or CHANGE the SELECT criteria by pressing CTRL/S.)

Say, for example, that you only want one school's records included in a report or that you just want to select students who scored above a particular point. DB MASTER allows one to specify these new select criteria without changing the select sub-format by going through the whole report generation process.

(However, to just print a report as specfied by the predefined sub-formats press RETURN. The program will tell you it is SETTING UP THE REPORT. And then it will ask if you want another date instead of the current date, i.e., the one that was entered when you first started the program. Once you have typed N and pressed RETURN the program will continue SETTING UP THE REPORT.

You will now be asked to INSERT the appropriate FILE diskette. Follow the instructions carefully. The program will check to make sure you have inserted the correct file diskette. Since you have specified that the records are to be sorted by building and grade the program will now procede to create a sort file from the general file. It will ask you to INSERT a NEW SORT diskette. And, it will remind you that this process will erase whatever is on the diskette. It is wise to have a diskette labeled, in red, SORT, to be used with this program so that no other diskettes will be used inadvertently and erased. The program will then proceed to create the sort file. When this step is completed, the program will request that the UTILITY FILE is reinserted into DRIVE 1. Press RETURN when ready.)

The program now displays the following screen:

```
                = REPORT SET-UP =

          (1) SLOT# (0=SCREEN) ..... 1
          (2) SUMMARY ONLY ......... NO
          (3) FORM FEED ............ NO
          (4) LINE FEED ............ NO
          (5) INTERFACE TYPE .........2
          (6) SPACES BET RECORDS .... 2
          (7) PRINT LINES/PAGE ..... 56
          (8) TOTAL LINES/PAGE ..... 66
          (9) STOP BET PAGES ....... NO
          (10) STATISITCS .......... NO
          (11) COMMAS .............. NO

     ENTER # TO CHANGE (0 IF NONE):
```

Items 1, 3, 4, and 5 concern setting up your printer to work with this program. (You should consult the program manual to determine the appropriate choices for these options.) Items 6, 7, 8, and 9 are options which can alter the page sub-format characteristics that are part of the general report format. (Only alter these if you want something different from your predefined sub-format.) Item 11 allows you to format numbers with commas. Item numbers 2 and 10 are the ones we are most concerned with.

STATISTICS, item 10, sets up the report to provided totals, averages, and standard deviations as shown in the illustrative reports, Handouts 7 and 9. SUMMARY ONLY sets up the report shown in Handout 9 where just the statistics and not the records are printed.

(To request these changes in the REPORT SET-UP menu, type 10 and press RETURN for a report that will have STATISTICS like the one in Handout 8. Enter the same change and 2, SUMMARY ONLY, for a report like the one in Handout 9. When you have made the necessary changes type 0 and press RETURN. You can then

PRESS ANY KEY TO:
- START PRINTING
- STOP PRINTING.

You can also:

PRESS 'ESC' TO START THE REPORT OVER
OR RETURN TO THE MAIN MENU.

Make sure that your printer is turned on and then proceed with printing the report. The information that goes to the printer will be displayed on the screen, but since it is not formated for the screen it will not be very readable. When the report has been printed the program will ask if you want another report generated. Type N and press RETURN to get back to the MAIN MENU.)

We have gone from the initial creation of a file to adding and editing records and then to the creation and printing of a report based on those records. This accomplishes the first four steps of the planning process shown on page four. As you have probably discovered, this is just the beginning of creating an efficient and useful data base. Revising and pilot testing are also needed to produce a top quality product.

Appendix

The Appendix of this guide, available as a separate document, includes a series of tutorials that provide specific information on features of this program. The Appendix is divided into 14 sections such as getting started, add records, speeding data entry, and setting up reports.

Besides summarizing the discussion in this presenter's guide, the tutorials present more detailed information on such features as long coded descriptions.

Together with the program manual these tutorials should provide you with the knowledge and skills needed to use the DB MASTER program to develop and utilize a data base for many different evaluation related purposes.

APPENDIX

Tutorial Topics

APPENDIX TO

No. 91 An Evaluator's Guide to Using DB MASTER: A Microcomputer Based File Management Program

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November 1983

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Appendix

This is the Appendix to ROEP Report #91 An Evaluator's Guide to Using DB MASTER: A Microcomputer Based File Management Program. Included is a series of tutorials that provide specific information on features of this program. The Appendix is divided into 14 sections such as getting started, add records, speeding data entry, and setting up reports.

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APPENDIX

Tutorial Topics

USING DB MASTER

HARDWARE REQUIREMENTS*

- DB MASTER requires an Apple II or Apple II plus computer with 48K RAM memory, Applesoft Basic in ROM (or in the language system).
- A minimum of two disk drives is recommended. (The program can support up to 4 disk drives).
- The program is designed to make use of Apple. DOS 3.3, 16-sector disk operating system.
- DB MASTER must be "booted" on a drive connected to Slot #6, Drive #1.
- A printer is also recommended in order to make use of DB MASTER's report generator. The progam will work with Apple's parallel, communications, and high speed serial interface cards.
- DB MASTER will read the current date if the appropriate clock is installed in your system.

(see the DB MASTER manual for the details of hardware requirements)

USING DB MASTER

SCREEN FORM OPERATION

- Press RETURN to move to the next field.
- Press the ESCape key to back up to the previous field.
- Press the left arrow (←) key to backspace within a field. This will erase characters as it goes. The right arrow (→) does not work within a field.
- Each field will accept certain "legal" characters. Other input will be ignored with a single "beep" from the computer.
- You cannot overtype the legal length of a field.
- If there is a default value (i.e., pre-set field contents), you may accept the default by pressing RETURN. Typing any other character will wipe out the default, display the legal field length, and allow you to enter a different value.

USING DB MASTER

GETTING STARTED

Booting the program

Insert	the DB MASTER diskette into the disk drive connected to Slot #6 Drive #1.
Turn	the power on
	The program title page will be displayed on the screen.
RETURN	Press to continue

Basic information

The program now asks you how many disk drives you have connected.

type 2 or whatever number is correct for your system.

RETURN

Next, your Apple will "beep" and prompt you:

TO USE AN EXISTING FILE INSERT UTILITY DISKETTE...IN DRIVE 2
PRESS 'RETURN' WHEN READY.

(see instructions for USING AN EXISTING FILE OR PRESS ESCape TO CREATE A NEW FILE).

(see instructions for CREATING A NEW FILE)

USING DB MASTER

CREATING A NEW FILE

Entering the date

Enter today's date with dashes, for example, 1-27-83

Password levels

1. READ ONLY users may only display records. They may not add, edit or delete records, or print reports. Also, certain "read protected" fields may be hidden from their view. You will choose which fields, if any, will be hidden, when you create your file.

2. READ/WRITE users have full access to the system. Their only restriction is that they may not change system passwords.

3. MASTER password users may also use all of the features of D B MASTER. In addition, they are the only users who may change, add, or delete file passwords.

Setting up a password system

type N	after, WANT PASSWORDS FOR THE FILE? (Y/N)
RETURN	to enter your response
type	your file name for the MASTER PASSWORD; you can add other passwords later if you wish (see changing passwords in file maintenence section)
RETURN	to enter your response

Form building display

The screen display shows you where you can place your fields.

Note: DO NOT use lines 1 or lines 23 and 24, since they are used by the program.

Note also the list of field types at the bottom of the screen: 1 ALPHA, 2 NUMERIC, 3 $, 4 Y/N, 5 SS#, 6 TEL, 7 DATES (see description of field types on next page).

RETURN to continue

USING DB MASTER

CREATING A NEW FILE

Field types

(1) ALPHA numeric fields may have 1 to 30 characters of letters, numbers and symbols. DO NOT put , , =, (,), ?, *, as the first character in a field. You may spread information over a number of adjacent field if you need more than 30 characters of space. For example,

Project _
Notes _
AND _
Comments _

(2) Numeric fields may be (1) small integers 0 to 255, (2) large integers, +/- 32767 (up to 6 characters; 5 numerals and +/-, or (3) floating point numbers, +/- 999,999,999 (up to 11 characters; 9 numerals, +/-, and decimal point).

(3) $, dollar and cents fields will be automatically formatted $_.00. Numbers will be entered right to left as with a calculator. This field must be at least 4 characters long $._ _.

(4) Y/N, yes/no fields will show the prompt (Y/N) once your form is created.

(5) SS#, social security number fields are formatted as follows:
_ _ _ - _ _ - _ _ _ _.

(6) TEL, telephone fields are formatted as follows:
( ) _ _ _ - _ _ _ _. You may specify an area code default if most of the numbers in your file are from the same area.

You may want to follow a TEL field with an alphanumeric field or small integer number field if many phone numbers contain extension numbers.

(7) DATES fields may be standard, where the date you enter remains the value of the field. Or they may be AUTO DATE in which case the current date is automatically inserted when you first enter the record and it is changed each time you edit that record.

Note: SS#, TEL, and the regular DATES fields may be used for other fields that would benefit from their special formatting. However, all spaces in the field must be completed.

Defining primary keys

Remember: Up to 10 fields and 35 characters may be combined for your primary key.

type	the first FIELD TYPE at the bottom of the page (1-7)
RETURN	
type	the field NAME (15 characters maximum)
RETURN	
type	any special information, such as with numeric field, the NUMBER TYPE (1-3) (1) 0-255 (2) +/-32767 (3) FLOATING PT.
type	the VERTical LOCATION, that is, where the field should appear relative to numbers on the left side of the screen (for example, 2)
RETURN	
RETURN	to accept the HORIZontal location, that is, where the field should appear relative to numbers on the top of the screen
type	the MAXimum LENGTH of this field
RETURN	
RETURN	to indicate that you do not want a particular value of this field to be a DEFAULT value
	If you want to ADD ANOTHER FIELD TO KEY? (Y/N)
type Y	to continue the add a key cycle
type N	to complete this cycle and proceed with the defining of the other fields in the record
RETURN	

Defining the other fields on the form

type	next FIELD TYPE (1-7)
RETURN	
type	next Field Name (15 characters maximum)
RETURN	
	Continue as with primary key fields!
CTRL/S	when you are done with page 1

FINALIZING THE PAGE

Checking the page layout

Review the page layout to see if you like it.

RETURN	to continue or press
ESC	to edit

Editing the page layout

You may change any of the characteristics of the fields. But, you cannot delete a field or move it ahead of a previous field.

type	the number to the right of each field to ENTER ITEM # TO EDIT
RETURN	
type	the change and/or
RETURN	to move from one part of the field definition to another
RETURN	past end of list of characteristics to go back to the start of the edit mode
type ø	IF DONE editing
RETURN	to enter ø
RETURN	to CONTINUE

Entering a secondary key

USE ONLY IF NEEDED

type ø	since you will not specify a secondary key at this time, and, therefore, you are DONE
RETURN	to enter ø

Adding another page

type	Y, if you have more fields
	add fields for next page(s) as previously described
CTRL/S	when finished with each page
type	N, if all fields and pages have been completed

USING DB MASTER

NAMING AND CREATING A FILE

Naming a file

type RETURN	your FILE NAME with no more than 15 characters

Creating a file

RETURN	If you are satisfied with the file, press TO CREATE FILE
Remove	DB MASTER from Drive 1
INSERT	File diskette into Drive 1
RETURN RETURN	(It's ok that THIS ERASES DISK)
INSERT	Utility diskette into Drive 2
RETURN	(It's ok that THIS ERASES DISK)
RETURN	PLEASE WAIT
Remove	File diskette from Drive 1
INSERT RETURN	DB MASTER PROGRAM DISKETTE in Drive 1
	You are now back at the first screen of the program. (See instructions for USING AN EXISTING FILE)
type Y RETURN	If not, press ESC to START OVER if you are SURE you WANT TO START OVER
	(go back to the beginning of CREATING A NEW FILE, Setting up a password system)

USING AN EXISTING FILE

If the program is not up and running, see the GETTING STARTED directions.

INSERT UTILITY DISKETTE into Drive 2
RETURN PLEASE WAIT while the file structure is loaded
type TODAY'S DATE (X-X-XX)

The red lights on the disk drives will come on as the program LOADS THE NEXT MODULE

Selecting a menu item

Then the DB MASTER MAIN MENU will appear with your FILE NAME: indicated. Make sure you have the correct file. You may now CHOOSE FROM the following options:

(1) DISPLAY/EDIT/DELETE RECORDS
(2) ADD RECORDS
(3) LIST RECORDS TO PRINTER
(4) LOAD OR CREATE SHORT FORM
(5) SET UP OR PRINT REPORT
(6) FILE MAINTENANCE
(7) LOAD OR CREATE NEW FILE
(8) CLOSE FILES & EXIT

type the number of the option you want.
RETURN To ENTER YOUR CHOICE (1-8),

(see the instructions for the specific option you have chosen)

ADD RECORDS (See also SHORT FORMS)

Selecting this menu option

type 2	selects this option
RETURN	enters your selection
	Note: If you are just starting to add records after creating a file, or at the beginning of a new session, you must
Remove	the DB MASTER diskette from Drive 1
INSERT	your File Diskette into Drive 1. Then press
RETURN	
	Once you have your file loaded, simply
type 2	to select this option
RETURN	enters your selection
type	Yes or No to tell the program if you want to PRINT NEW RECORDS.

Printing new records

type Y	if you have a printer set up
RETURN	
RETURN	if PRINTER SLOT is #1 (if not, type printer slot #)
TURN	ON PRINTER, PRESS
RETURN	TO CONTINUE

Adding records: Preliminary control options

CTRL/C	pressing CTRL (control) and C keys together takes you back to the main MENU
ESC	allows you to CHANGE DEFAULTS (see the directions for (1) Speeding data entry: Last Record Default Mode, and (2) SHORT FORMS)
RETURN	if you are ready to ADD RECORDS

Moving on a form

RETURN	moves the cursor forward from one field to another
ESC	moves the cursor back from field to field
CTRL/N	pressing CTRL (control) and N keys together moves you to the NEXT page in the form

ADD RECORDS

Adding whole records

type	information for each field.
	When you have added all the information for a record, you should review it. Go from page to page by pressing
CTRL/N	
	Go from field to field by pressing
RETURN	to go forward
ESC	to go back
	When you are satisfied with the record, press
CTRL/A	the CTRL (control) and A key together to ADD RECORD

SPEEDING DATA ENTRY

You can simplify and speed the data entry process in four ways:

The first way is to code information in the record. LONG CODE DESCRIPTIONS may be substituted at reporting time.

Another way is to set temporary DEFAULT values for those fields which have the same value for a whole set of records.

A third way is to use a SHORT FORM with just the fields you need for a particular set of data.

The fourth way is to use the INCREMENT function to increase subsequent values in a field by 1.

All of these may be used together.

Speeding data entry: (1) LONG CODE DESCRIPTIONS

	From the MAIN MENU
type 6	FILE MAINTENANCE
RETURN	
INSERT	PROGRAM DISKETTE IN DRIVE 1
RETURN	

D B MASTER allows you to store short codes (up to 5 characters) in numeric (except for dollar/cents) or short alphanumeric fields, then pring "long code descriptions" in place of the short codes on your reports. Code fields may be added, changed or dropped at any time - they are not defined when you create your file. You may use any or all of the eligible fields in your file as code fields.

Type 4	CODE FIELD DESCRIPTIONS on FILE MAINTENANCE MENU
RETURN	

A list of the fields in your file will appear on the screen. Choose the field you wish to work with. The program will only let you choose fields that are allowed to have long codes. (As always, if all of the fields do not fit on the screen at once, a CTRL/N will show you the Next page of the list.)

type	the field you wish to work with
RETURN	to ENTER FIELD #

Speeding data entry: (1) LONG CODE DESCRIPTIONS, cont'd.

Once you have chosen your field, a new menu will give you several options.

type 2 RETURN — ADD/CHANGE/DELETE codes

In this mode, you will first enter the short code for a field. Any existing long code description assigned to that code value will be displayed on the next line. You may then enter a new description for that short code by typing it in and pressing RETURN. To actually make the entry into the file, you must then enter a

CTRL/S (for Save).

Or you may enter a

CTRL/D to Delete that entry from the file.

Pressing the

ESCape key will let you re-start the current entry, or you may enter a

CTRL/N to move on to the next code.

type the field value RETURN

type The Description RETURN

CTRL/S — Press the CTRL (control) and S keys together SAVES the description. You must SAVE each entry as you go.

CTRL/D — DELETES the entry.

ESC — ESCape allows you to re-start the current entry

CTRL/N — moves you to the NEXT entry.

When you are finished entering new descriptions, press

CTRL/C the CTRL (control) and C keys together to return to the code menu.

Speeding data entry: (1) LONG CODE DESCRIPTIONS, cont'd.

To check your set of descriptions

type 1 RETURN — to LIST DESCRIPTIONS

Type RETURN — STARTING CODE VALUE

type Y/N RETURN — Yes or no to send DATA to PRINTER

If yes, TURN PRINTER ON, RETURN TO CONTINUE.

RETURN — Check to see that you have the descriptions you want. Press to continue.

Once you have finished with one set of descriptions, you may

type 3 RETURN — to SELECT A NEW CODE FIELD

This option will take you back to the field list at which time you may choose another field to work with.

When you are completely finished,

type 5 RETURN — to return to the FILE MAINTENANCE MENU.

type 7 RETURN — to return to the MAIN MENU.

Speeding data entry: (2) LAST RECORD DEFAULT MODE

Once you are in the ADD RECORDS mode, press

ESC — to CHANGE DEFAULTS. This causes the program to ask LAST RECORD DEFAULT MODE ? (Y/N)

type Y
RETURN — Yes

Move through the form, entering the common values as you go. For example, you may want to add all the students in one school, in one grade, and in one class in one setting.

To do so, set all of these values on the first record. Then each new record to be created will appear with these fields already filled in on the form. When entering data in a record skip over these fields by pressing

RETURN — to leave them as they are.

If you want to change a default value, just start to type, and then the program will give you a blank field.

Old DEFAULT values may be eliminated and new DEFAULT values may be set at any time using the LAST RECORD DEFAULT MODE.

SPEEDING DATA ENTRY

Speeding data entry: (3) CREATE SHORT FORM

	From the MAIN MENU,
type 4	LOAD OR CREATE SHORT FORM. You will be asked
	CREATE NEW FORM? (Y/N)
type Y	Yes
RETURN	
	You may be asked to
	INSERT DB MASTER into Drive 1
RETURN	
	You will then be shown the
	SHORT FORM MENU
	Choose from:
	(1) CREATE A SHORT FORM
	(2) DELETE A SHORT FORM
	(3) RETURN TO MAIN MENU
	ENTER your CHOICE (1 to 3):
type 1	to CREATE A SHORT FORM
RETURN	
	All of the fields of your file will be listed.
type	the number of first field to include on the SHORT FORM
RETURN	to select this field
	You may switch from the list to DISPLAY of the SHORT FORM by pressing the CTRC (control) and D keys together.
CTRC/D	
	This shows you a screen like the one you used to create your file to begin with. You can use this to visualize the layout of the SHORT FORM.
type	number for LOCATION: VERTICAL
RETURN	
type	number for LOCATION: HORIZONTAL
	You may choose the Default 1 or move the field over in relation to the numbers across the top of the screen.
RETURN	
	Select all of the fields you want and position them. Then
type ø	IF DONE.
	Then look at the form and decide if you want to edit. If so,
RETURN	
type	FIELD # TO EDIT.
	Edit as you did in creating the file.
RETURN	
type ø	ENTER ø IF NO CHANGES NECESSARY
RETURN	
type	NAME FOR THIS FORM (maximum 15 spaces)

SPEEDING DATA ENTRY

Speeding data entry: (3) CREATE SHORT FORM, cont'd.

You will be shown the SHORT FORM MENU.
(1) At this point you can select your form to use for adding records.

type 3 RETURN — RETURN TO MAIN MENU

(2) You can DELETE A SHORT FORM

type 2 RETURN — DELETE A SHORT FORM

Your short form names will be displayed.

type the number of the one to be deleted RETURN

(3) You can CREATE A SHORT FORM to do a new one. Follow the procedure previously described

Speeding data entry: LOAD A SHORT FORM

From the MAIN MENU,

type 4 RETURN — LOAD OR CREATE SHORT FORM

you will be asked
CREATE NEW FORM? (Y/N)

type N — No

You may be asked to INSERT DB MASTER into DRIVE 1

RETURN

The screen will show
= > LOAD SHORT FOR < =

Ø NORMAL FORM
1 Your short form
2 Your short form

ENTER YOUR CHOICE?

type your choice RETURN

The program will now show

= > DB MASTER MAIN MENU < =
You may choose either
(1) DISPLAY/EDIT/DELETE/RECORDS
(2) ADD RECORDS
(3) LIST RECORDS TO PRINTER

and take advantage of the SHORT FORM

SPEEDING DATA ENTRY

Speeding data entry: LOAD A SHORT FORM cont'd.

when you are finished using this particular SHORT FORM return to the MAIN MENU

type Y — LOAD OR CREATE SHORT FORM
RETURN

You may have to INSERT PROGRAM DISKETTE IN ..., DRIVE 1

RETURN — TO CONTINUE

The LOAD SHORT FORM menu will appear.

type Ø — to load the NORMAL FORM again
RETURN — to ENTER your CHOICE

This will return you to the MAIN MENU

Speeding data entry: (4) CTRL/I = INCREMENT

Another way to speed data entry is to use the CTRL (control) and I keys to increase a value by 1. For example, an ID number can be incremented for each new record by simply pressing

CTRL/I — when the cursor is on this field

Use this in conjunction with the LAST RECORD DEFAULT MODE to easily enter a whole series of records.

USING DB MASTER

DISPLAY/EDIT/DELETE RECORDS

Selecting this menu option

type 1	selects this option
RETURN	enters your selection
Remove	the DB MASTER diskette from Drive 1
INSERT	your file diskette into Drive 1. Then press
RETURN	WHEN READY

The red light on disk drive 1 comes on to let you know your file is being activated

Setting the search criteria

In order to specify which records you wish to work with, you must tell the program to find them. If you simply want to start with the first record in the file, press

CTRL/F — the CTRL (control) and F keys at the same time.

However, if you wish to have the program search for specific records, you must give it more detailed instructions. These instructions take the form of numbers, letters and symbols. To enter search criteria for a particular field, the first step is to move the cursor to that field.

Moving on a form

RETURN	moves the cursor forward from one field to another
ESC	moves the cursor back from field to field
CTRL/N	pressing the CTRL (control) and N keys at the same time moves you to the NEXT page in the record

Once you have found the field you wish to search on, you may specify search criteria.

Search criteria

With DB MASTER you have 5 major ways to search for a record, as shown at the bottom of the screen:

^RNG *WLD CD ( ) INCL ?ANY

Relationals:
< , =, > , <>, >=, <=

Each search option is described separately.

USING DB MASTER

DISPLAY/EDIT/DELETE RECORDS

Editing records

CTRL/F	pressing the CTRL (control) and F keys at the same time will tell the program to FIND the first record which meets the search criteria. Once the record is displayed you press
ESC	to EDIT the record
RETURN	moves the cursor forward through the record
ESC	moves the cursor back through the record
CTRL/N	moves the cursor to the NEXT page. When you have found the field you wish to edit or change, simply
type	the change and press
CTRL/S	the CTRL (control) and S keys together SAVE a change. However
CTRL/V	the CTRL (control) and V keys together VOID the change if you decide not to go ahead with it.

Special editing options

+	this MATH edit option allows you to change a field based on a mathematical computation. For example, to change a budget field by a constant amount (say 20%) simply.
type +	at the bottom of the screen. You will be asked to indicate +, -, * (multiply), or / (divide). Select one, for example *,
type *	
RETURN	then ENTER CONSTANT, for example, .80
type .80	
RETURN	the current figure in the chosen field will automatically be reduced by 20%.
CTRL/S	SAVEs this change
CTRL/V	VOIDs this change
I	this INCREMENT option allows you to automatically increase a value by 1. Simply find the field to be changed and press.
CTRL/I	the CTRL (control) and I keys at the same time. The number will automatically be increased by 1.

Deleting a record

CTRL/D	pressing CTRL (control) and D keys will initiate the DELETE option. If you ARE SURE
type YES	TO DELETE
RETURN	

Note: ONCE A RECORD HAS BEEN DELETED FROM YOUR FILE, IT CANNOT BE RETRIEVED. This is a good reason for keeping backup copies of your files.

SEARCH CRITERIA: also used to SELECT records for a report

Doing a RANGE search

^^RNG	allows you to search for a RANGE of alphabetic or numeric values For example, to retrieve all clients in the first quarter of the alphabet (A through GZ).
type ^^	after a name field. The program will request that you = ENTER MINIMUM VALUE FOR RANGE =
type A	to indicate "minimum value".
RETURN	to enter the value. The program will then request that you = ENTER MAXIMUM VALUE FOR RANGE =
type GZ	to indicate MAX.
RETURN	
CTRL/F	press CTRL (control) and F keys at the same time to FIND the records.

If you want to search on more than one criteria, see those instructions.

To EDIT or DELETE the records just found, see those instructions.

SEARCH CRITERIA

Doing a WILD CARD search

*WLD CD — allows you to perform a WILD CARD search, that is, a search which matches the letters which are preceded by the *.

Note: You cannot use it with numeric or dollar and cent fields.

Use the wild card search if you want to find records based on one field, but are unsure of the spelling, length, or specific contents of the field.

For example, use it if you want to find all of the records that start with the letters STANF, since you are not sure whether a name is STANFORD or STANFIELD.

type — STANF*

CTRL/F — press CTRL (control) and F keys at the same time to FIND the records.

If you want to search on more than one criteria, see those instructions.

To EDIT or DELETE the records just found, see those instructions.

SEARCH CRITERIA

Doing an INCLUDES search

( )INCL — allows you to search for a string of characters anywhere in an alphanumeric field, only.

Use the includes search if you want to get together all of the records which have the same word, set of letters, or other characters in common.

For example, you might want to search for all of the titles in an article inventory file which have the word "computer" in them, such as Your first computer, Computers in the classroom, How to computerize your inventory.

Because of the complexity of finding characters anywhere in a field, this search is very time consuming.

type ( ) computer
CTRL/F — press CTRL (control) and F keys at the same time to FIND the records.

If you want to search on more than one criteria, see those instructions.

To EDIT or DELETE the records just found, see those instructions.

SEARCH CRITERIA

Doing an ANY search

?ANY — the any search may be used anywhere in an alphanumeric, telephone number, social security, or date field.

The program responds by accepting any character in that place.

For example, you may not know if someone spells a name, Gray or Grey. Therefore,

type GR?Y.

CTRL/F — press CTRL (control) and F keys at the same time to FIND the records.

If you want to search on more than one criteria, see those instructions.

To EDIT or DELETE the records just found, see those instructions.

USING DB MASTER

SEARCH CRITERIA

Doing a RELATIONAL search

these are relational search symbols

<	LESS THAN
=	EQUALS
>	GREATER THAN
<>	NOT EQUAL TO
>=	GREATER THAN OR EQUAL TO
<=	LESS THAN OR EQUAL TO

A relational search may be used with any field. A particular record may be specified by entering a critical field value like ID number, phone number, name. You need not use the equal sign (=). If, for example, you want to find all student records with percentile scores less than or equal to 25, you would < = 25 after that field name.

type CTRL/F — press CTRL (control) and F keys at the same time to FIND the records.

If you want to search on more than one criteria, see those instructions.

To EDIT or DELETE the records just found, see those instructions.

USING DB MASTER

SEARCH CRITERIA

Searching on more than one field

- You may search on as many as 20 fields on any combination of criteria (a RANGE search counts as 2, minimum and maximum). The program will warn you if you enter too many criteria.

- Pressing ESC if you wish to change search criteria once they have been defined. This will work you backwards to the search criteria you wish to change. Then you must re-enter subsequent criteria.

- Entering more than one criteria will result in AND searches. That is, a record must match each of the criteria to be identified in the search.

- Up to 10 OR search criteria may be initiated by entering the OR criteria after all of the multiple AND criteria have been entered. Press

CTRL/O
RETURN
type criteria the same as in an AND search, after each OR criteria is entered press
RETURN
a blank screen will appear.
You will have to press
CTRL/O
RETURN to request another OR criteria.
When finished, press
CTRL/F to FIND the records conforming to the search criteria.

SEARCH CRITERIA

Doing a TOTAL-STATISTICS search

CTRL/T — once all search criteria have been entered you may run a search which gives you Total-statistics for the group.

For example, if you have a student test score file and wish to know how fourth graders did who took a pretest, you would

type 4 — for the grade field and
RETURN
CTRL/T — in the pretest field.

Then you would set the pretest field criteria at greater than 0.

type >0 — then press
CTRL/F — to tell the program to find those records.

The program will search the file and show this on the screen.

```
DATA FOR =   PRETEST
COUNT  =
SUM    =
AVE.   =
STD. DEV.  =
```

As each new record is found, the figures will change until all have been found.

USING DB MASTER

LIST RECORDS TO PRINTER

Selecting this option

	Once you are at the MAIN MENU
type 3	LIST RECORDS TO PRINTER. If your printer is connected to SLOT #1 press
RETURN	to accept default value. If not, change the number and press RETURN
	TURN ON PRINTER
RETURN	to continue
Remove	DB MASTER diskette
INSERT	FILE diskette into DRIVE 1
RETURN	

Specifying the search criteria

	You are presented with a blank form and the various search options. (see directions for SEARCH CRITERIA) Set your search criteria by moving the cursor to the appropriate fields.
RETURN	to go forward on the form
ESC	to move back on the form
CTRL/N	to move from page to page
	when you have set all of the criteria, press
CTRL/F	the CTRL (control) and F keys together.

Printing records

	The program will automatically print all of the records that match the search criteria.
ESC	will stop the printing process
	When all records are printed, you will be returned to the blank form. Specify new criteria or press
CTRL/C	the CTRL (control) and C keys together to return to the main menu

USING DB MASTER

SETTING UP REPORTS

The following discussions focus on the four elements of creating a report, namely,

1. The PAGE Format determines the overall appearance of your report. Page numbering, whether the report will be dated, the number of lines on a page, and the spacing between records are included in the Page Format.

2. The DATA Format is the main sub-format. It holds the actual information that will be printed or displayed in your report. Comments and footnotes, column titles, and the actual data, computed and comment fields and their positions are all in the Data Format.

3. The SORT Format determines the order in which the selected records will be printed on your report.

4. The SELECT Format contains the selection criteria that choose which records from the file will be included in a report. A Select Format is set up in the same way that you enter your criteria to search for a record or records in the Display mode.

Selecting this option

	Once you are at the MAIN MENU
type 5	to select SET UP OR PRINT REPORT

Creating a new report

type Y	to tell the program that you wish to CREATE A NEW REPORT
RETURN	
	You may have to
Remove	the file diskette from Drive 1 and
INSERT	PROGRAM DISKETTE IN. . ., DRIVE 1 press
RETURN	TO CONTINUE.

A blank copy of the REPORT LAYOUT FORM is at the end of this Appendix, to be used in creating new report formats.

Choosing an already-developed page format

The screen will display the PAGE FORMATS available. If you wish to select a format that has already been defined simply

type the number to ENTER YOUR CHOICE
RETURN

Another menu will appear on the screen with the following four choices:

1. PRINT out the specifications for that format. If you choose this option, the program will print the format information and return once again to this menu. You may, if you choose, print the spec's for several formats before choosing the one you wish to use on your new report, or deciding to create a totally new sub-format.

2. REPLACE this format. Since you cannot delete sub-formats (you would have a problem if you tried to run a report which needed the sub-format that had been deleted), D B MASTER will allow you to replace formats which are no longer in use or which you would like changed, with new formats. Note that any report set up earlier to use such a subformat will then use the replacement format.

3. CHOOSE ANOTHER format. This option will return you once again to the list of formats. You may then choose another format, which will return you to this menu, or enter a "0" to create a new format.

4. MOVE ON to the next sub-format, and use the last format which you chose from the list here in constructing your new master report format.

This process makes it very easy to create a new Master Report Format from a combination of new and pre-existing sub-formats.

SETTING UP REPORTS

Creating a new page format

The screen will display the PAGE FORMATS available. The first choice, (1) STANDARD PAGE, has these characteristics:

PAGE FORMAT = STANDARD PAGE

PUT DATE ON PAGE?	YES
NUMBER PAGES	YES
SPACES BETWEEN RECORDS =	1
PRINT LINES PER PAGE =	50
TOTAL LINES PER PAGE =	66
PAUSE BETWEEN PAGES	NO

If you wish other characteristics, such as a PAUSE BETWEEN PAGES to feed single sheets of paper or more SPACES BETWEEN RECORDS,

type Ø RETURN — to CREATE NEW FORMAT

You will be asked,

IS THIS A LABEL FORMAT? (Y/N)

You would use this format for printing mailing labels, file labels, etc.

type N RETURN — if you want to create a printed or screen report format

The screen will show you a rough diagram of a report page. As each question is asked, the program highlights the section on the page.

type RETURN — Y (Yes) or N (No) to PRINT DATE ON REPORT?

type RETURN — Y (Yes)/N (No) to PRINT PAGE NUMBERS?

type — number of BLANK LINES BETWEEN RECORDS?

You may LEAVE 0 to 9...(Ø = SINGLE SPACING)

RETURN

type — Y (Yes)/ N (No) to STOP PRINTER BETWEEN PAGES?
Use for single sheets or Screen Reports

RETURN

RETURN — to accept standard 56 (LINES PER PAGE OF PRINT or

type — number you want.
Remember, IF YOU ARE PREPARING A SCREEN REPORT, ENTER 21 FOR NUMBER OF PRINT LINES PER PAGE!

RETURN

RETURN — to accept standard 66 TOTAL LINES PER PAGE or

type RETURN — number you want

USING DB MASTER

SETTING UP REPORTS

Saving the page format

type	a NAME FOR THIS FORMAT (maximum 15 letters)
	The screen will show you the PAGE FORMAT and ask IS THIS OK?
type RETURN	Y (Yes) to accept or N (No) to start over
	The screen will display the CHOOSE PAGE FORMAT menu
type RETURN	the number of the format you want or Ø to CREATE NEW FORMAT or ESC to return to the MAIN MENU
	If you choose a format such as the one you just created, the screen tells you that
	YOU MAY NOW (1) PRINT FORMAT DATA (2) REPLACE THIS FORMAT (the only way to delete a format) (3) CHOOSE ANOTHER FORMAT (4) MOVE ON TO NEXT FORMAT
type RETURN	(1 to 4) TO ENTER your CHOICE It is a good idea to print the format data as a record so that you will remember its characteristics.

Printing the format data

type 1	to PRINT FORMAT DATA
RETURN	TURN ON PRINTER & PRESS
RETURN	
	The program will automatically print the characteristics. It will then display the four choices, (1) PRINT, (2) REPLACE, (3) CHOOSE, or (4) MOVE.
type 4	to MOVE ON TO NEXT FORMAT
RETURN	

USING DB MASTER

SETTING UP REPORTS

Creating a data format

type ø	to CREATE NEW FORMAT
RETURN	
RETURN	to accept a 79 column REPORT WIDTH. This will produce a report on a typical 8 1/2' X 11" page.
	For SCREEN REPORTS, ENTER 39, since the screen is only 39 columns wide.
	For wider reports, specify the width as determined during the layout process.

On the following page is included information on:

1. Creating comment line, that is, titles and footnote.
2. Creating column titles
3. Setting up computed fields.
4. Entering the fields to be printed.
5. Designating special report elements.

USING DB MASTER

SETTING UP REPORTS

Creating comment lines

type Y — if you want to give the report a header (title) and/or footer (footnotes),
type N — N (No) if you do not
RETURN

Entering comment lines

- Use your layout sheet to guide you!
- enter lines 33 characters at a time.
- Press RETURN for next section.
- Use up to 9 lines.
- Leave line blank to skip a line on your report.
- enter Top of Page comment lines first, followed by footnote lines.
- If you do not want a line centered, enter a @ after the last character on the lines.
- After you complete each line, simply

type Y — to ADD ANOTHER COMMENT LINE.

- when you have entered all of the title and footnote lines

type N — to stop the process

Editing comment lines

type — the number of the LINE TO EDIT.

when you press
RETURN — the line will be erased and you can retype the line.
CTRL/N — to move to the NEXT WINDOW SECTION
type Ø — for NO EDIT when you are finished.
RETURN

Specifying where comment lines go

type — the # COMMENT LINES AT TOP OF PAGE? (Others will print as footnotes)
RETURN

USING DB MASTER

SETTING UP REPORTS

Setting up computed fields

type Y	if any of the fields in your report are to be COMPUTED from other fields on your form.
RETURN	The program will list the fields.
CTRL/N	will move you to the NEXT PAGE of fields.
type	FIELD # (Ø= CONSTANT)
RETURN	
type	+ , − , * (multiplication), / (divide), ∧ (exponential)
RETURN	
type	FIELD # (or CONSTANT)
RETURN	
Type	CONSTANT
RETURN	
type Y	for ANOTHER computed FIELD or N to stop the process
RETURN	

SETTING UP REPORTS

Entering the fields to be printed

CTRL/D	allows you TO SEE THE REPORT FORMAT or FIELD LIST
CTRL/N	allows you to move to the NEXT SCREEN or NEXT PAGE of fields
RETURN	TO CONTINUE

- Use your layout sheet to guide you!

type	FIELD NUMBER (Ø IF DONE)
RETURN	
type	TAB ADVANCE (Ø-99)
RETURN	
type	PRINT WIDTH to specify the amount of space you wish to allocate to the column. If you leave this blank, it will default to the field length in the file.

SETTING UP REPORTS

Special Report Elements

Print widths

- If you leave the Print Width space empty, the following rules will determine the default print width that will be allowed for the current field:
- Alphanumeric fields will be set to the width of the field in your file (same as the field length on your form).
- Phone number, Social Security and Date fields will be set to their proper lengths - 12, 11 and 8 respectively.
- Yes/No fields will be set to 1 character.
- Comment fields will be set to their maximum legal length of 15.
- Record Numbering will use 4 spaces.
- All other fields (Numeric, Dollar/Cents and Horizontal Sub- and Grand Totals) will be set to eleven (Applesoft's maximum of nine significant digits, plus room for decimal point and minus sign). REMEMBER TO SET THE WIDTH OF THESE FIELDS TO 15 CHARACTERS IF YOU EXPECT RESULTS IN SCIENTIFIC NOTATION.

Long code descriptions

- In order to speed data entry you may code field entries with a set of up to 5 numbers or letters (see directions under speeding data entry: (1) LONG CODE DESCRIPTIONS).
- Using the FILE MAINTENANCE option you may then create LONG CODE DESCRIPTIONS (or table look-up values).
- If you answer yes when the report data format module asks about them, the program will automatically substitute your descriptions for the code in your file.
- Be sure to leave enough room to print the long description.

type Y to PRINT LONG CODE DESCRIPTIONS or N not to
RETURN

Special Report Elements, cont'd.

Horizontal subtotals

By entering a number from 1-5, you may add the contents of this field to one of the five subtotals. If you enter a "0" (or leave the space blank), this field will not be included in the subtotals or grand total.

RETURN will enter a ∅ for this option.

Number after decimal point

This figure will be used in formatting the printout of this field. Numbers are always printed right justified, and trailing zeros will be added if necessary, so that your decimal points (or the "ones" place if you enter zero or leave this figure blank) will line up in a vertical column.

RETURN will enter a ∅ for this option.

Column subtotals and totals

If you enter a "Y" here, subtotals will be kept for the values in this column, and printed at each subtotal break (for information on subtotal breaks, see directions). A grand total will also be printed at the end of the report.

type Y/N for this option
RETURN

Record numbering

type 251 to number records by subtotal

type 252 to number records by report

You may have the records in your report numbered by the program. Record Numbering by Subtotal will zero the count and start over each time there is a subtotal break. Record Numbering by Report will print a count from one to the total number of records in the report.

If you do not enter the width for a Record Numbering field, it will be set to a default of four.

Special Report Elements, cont'd.

Data comments or labels

type 225 ADD A COMMENT
RETURN

- A Comment Field is a string of 1 to 15 characters which will be printed in the same position in each record that is included in your report. Comment fields may be used to add special punctuation (for instance: %, /, or $) or to add labels to data fields.

- Comment fields will be printed at each subtotal break, and with the totals at the end of the report.

- In some cases, Comment Fields may completely replace the column titles. This can make reports with several lines of data for each record easier to read. To use this format, simply enter a descriptive Comment Field (often the field name from the form) to be displayed in front of the contents of each data field that you will print.

- D B MASTER allows up to 20 comment fields per report. To enter a comment field, use the field number labeled "Add a Comment." Each time you add a comment, it will appear in the field list, and the number for Add a Comment will be increased by one.

- You may choose any width from 1 to 15 characters for a comment field. The width will normally be equal to the number of spaces in the comment. If you do not enter a value, it will default to fifteen.

SETTING UP REPORTS

Setting the sort criteria

- D B MASTER can "sort" your records in alphabetic or numeric order based on the contents of any of the fields in your file (but not computed fields), or on a combination of as many as six fields. The information required to perform a sort is stored in the Sort Sub-format.

- (As with the other sub-formats, there will be a list and menu from which you may choose an existing format to use, replace or print out, or to create an entirely new format.)

- When you create a new Sort Sub-format, a list of the fields in your file will appear on your screen. As before, you may enter a CTRL/N to display the Next page of the list. Below the list will be a prompt asking for the number of a field to use for your sort.

- Your records are already sorted and stored in primary key order by D B MASTER. So obviously the fastest way to run a report is to print it in primary key order (no sort required). To print your report in this way, choose the standard sort format included by the program, which is called "File Order." (Or create a "null" sort format - that is, one with no sort fields at all.)

  When you run a report in primary key order, the records are taken from the master data diskettes, and the appropriate fields are sent directly to your printer (or to the screen).

  NO TEMPORARY FILE IS NECESSARY WHEN PRINTING A REPORT IN PRIMARY KEY ORDER.

- If you wish to print the records on your report in other than the primary key sequence, you may now enter the numbers for up to six sort fields.

- D B MASTER will sort the file based on the contents of the first field that you enter. That field is called the "Major Sort" field. If there are two or more records with the same contents in that field, they will be sorted into the order of the second sort field, and so forth.

Designating subtotal break fields

- If one of your sort fields will have several records with each value, you may find it useful to "subtotal break" on the contents of that field. That means that every time the contents of that field changes, the program will stop and print subtotals for all of your column total fields before printig the records with the next value in that field.

- After you have set up your sort the program will ask how many of the sort fields you want to subtotal break on.

  Note that in order to subtotal break on, for instance, your third sort field, you must also break on the first two fields.

Identifying page breaks

- You may also ask D B MASTER to automatically begin a new page whenever a subtotal break occurs on certain fields. If you are using continuous form paper, your printer will skip to the top of the next page as soon as the subtotal information has been printed. Otherwise, the printer will stop after the subtotals and the program will prompt you to insert another sheet of paper.

- The same restriction that applied to subtotal breaks also applies to page breaks (for the same reason). In order to page break on the second sort field, for example, you must also break on the first, and so on. Also, you can only page break on fields that you also subtotal break on.

- Note that it is not necessary to include a field that you will use as a page break field, as a printed field on your report. The name of the field and the new field content that is generating each page break will be printed at the top of each page. And since the contents of the field will be the same for all of the fields within that subtotal/page break grouping, printing the field in each record would be redundant.

- If you have assigned a long code description to the contents of the page break field, both the actual (short) field contents and the long code description will be printed at the top of each page. This occurs automatically - there is no need to request it.

Restricting the size of sort files

- If you are not printing your report in primary key order, and if you have more than one diskette of records in your file, you should try to break up the report in some way so that your Temporary Print File will not become too large.

- IF A TEMPORARY PRINT FILE GROWS BEYOND A SINGLE DISKETTE, YOU WILL HAVE TO DO A GREAT DEAL OF DISK "SWAPPING." NOTE THAT THIS WILL NEVER BE A PROBLEM IF YOU PRINT YOUR REPORTS IN PRIMARY KEY SEQUENCE.

- When you have named your Select sub-format, you are nearly finished. All that remains is to tie the four sub-formats into a single Master Report Format.

Setting the select criteria

- The procedure for selecting records for inclusion in a report is identical to the procedure for searching for records for screen display (see pp. 20-25).
- The same form which you have used in searching for records will appear on your screen. You may then enter as many as twenty criteria for the program to use in choosing the records for your report. (Each Range criteria counts as two of the twenty.)
- You may use any of the search types in setting up your selection, including "OR's".
- To print the entire file, enter a CTRL/S to Save the format without entering criteria into any of the fields. Or simply use the standard Select format created by the program, which is called "All Records."

Saving a Master Report Format

- The four sub-formats which you have now chosen or created will be treated by D B MASTER as a single Master Report Format (the individual sub-formats will also be available for inclusion in other Master Report Formats at a later date).

- The program will now ask if you wish to store this Master Report Format for repeated use. If you do, you will be asked for a name for the Master Format. Try to use a descriptive name which will remind you of the contents of the format when you see it in a list of formats in the future. The next time you want to use this report format, you will not have to re-do any of the procedure that we have just finished describing. You will simply tell the program which previously created Master Report Format you wish to use, and the computer will take care of the rest!

Giving the Format a different title

- Finally, you may enter a title for your report. If you are storing the master format for repeated use, the master format name will become the default for the report title, since they will frequently be the same. Press RETURN to accept the default, or type in a different title.

- IF YOU ARE SETTING UP A LABEL FORMAT, DO NOT INCLUDE A REPORT TITLE! If there is a default displayed for the title, press the SPACE bar once to wipe out the default, then press RETURN.

PRINTING A REPORT

Selecting the Master Report Format Desired

- There are two ways to get the module which actually prints D B MASTER'S reports: one is by setting up a new report format and telling the system that you wish to print the new report right away, and the other is from the Main Menu, by entering a "5" ("Set Up or Print Report") and answering "N" to the question "Create New Report?"

- If you have come from setting up a new format, the program will proceed to set up and print that report. Otherwise, you will be shown a list of the master report formats that have already been created for the file you are working with, and you may choose the one you wish to print. Note that the first format listed, called "Print All Records", is put there by the program, and includes the four standard sub-formats which D B MASTER sets up when it builds each file.

- The directions on your screen will prompt you for the various diskettes needed by the program. Remember that if you are printing a report which is to be sorted, the system will have to build a temporary print field, so you should always have an extra diskette or two available. If you have a very large file, building the temporary file can take a half-hour or more. The flashing cursor on your screen will assure you that the program is still working (it will also turn the disk drives on frequently as it builds the file), and the number at the center of your screen will tell you how many of your records have been included in the report thus far.

- The program will ask you to confirm the date to be printed on your report. You may either press RETURN to accept the date as displayed on the screen, or press the ESCape key to enter a different date. This date may be entered in any format, so styles such as "30-NOV-80" are acceptable. The maximum length for the date input is nine characters.

PRINTING A REPORT

Changing report parameters

- When your report is ready to print, a display will appear on your screen. You may now change most of the parameters which are set up both in the Page sub-format and in the Printer Parameters section of File Maintenance, plus a few extra features, as follows:

  (1) PRINTER SLOT # (0=SCREEN)
  (2) SUMMARY ONLY
  (3) FORM FEED
  (4) LINE FEED
  (5) INTERFACE TYPE
  (6) SPACES BETWEEN RECORDS
  (7) PRINT LINES/PAGE
  (8) TOTAL LINES/PAGE
  (9) STOP BETWEEN PAGES
  (10) STATISTICS
  (11) COMMAS

- Those parameters which are normally set in File Maintenance or the Page format will default to the values set there. Summary Only, Statistics, and Commas will all default to "No". To change any of the Yes/No parameters, simply enter its number. Each time a parameter's number is entered, it will "toggle" back and forth between Yes and No. To change any of the other parameters, enter its number, and the program will ask for a new value. You may make as many changes as necessary before printing your report.

- If you stop your report before it is finished (by pressing "ESC"), or after the report has been completed, the program will ask if you wish to begin that report again. If you say "Yes", the program will return to the Change Parameters display. You may then make whatever changes are necessary (if any), and begin again. This process may be repeated as often as needed.

PRINTING A REPORT

Including statistical information in reports

- Statistican information is available in the report generator. To get the Count, you must use "Record Numbering by Report" or "Record Numbering by Subtotal Break". The Sum is the same as a column total. To get the Average and Standard Deviation for those fields which you are totaling, turn on the "Statistics" function before printing the report. This means that your existing reports can be printed with statistics without having to recreate them.

- The statistics will be printed at each break where column totals appear. You MUST have requested column totals on a field in order to get statistics for that field.

- Statistics may also be included in screen and summary only reports.

Printing summary only reports

- Finally, the program will ask if you would like a normal or a summary only report. A summary only report includes everything BUT the records themselves: that is it will print the report title, comment, footnote and column title lines, subtotal and page breaks, and column sub and grand totals. But the records themselves, which normally constitute the body of a report, will not be printed. The purpose of a summary only report is to save printing time and paper when the only facts which you really need are the column subtotals and grandtotals. Any report format may be printed as a summary only report at some times, and as a regular report at other times.

PRINTING A REPORT

Stopping and starting printout

- If the page format being used by your report includes stopping between pages, the program will stop whenever it is necessary to put a fresh sheet of paper into the printer. This feature may also be used with screen reports to print a full screen page, then wait for a key press before printing the next page.

- In addition, you may press the ESCape key to stop the report at any time (actually, it will finish printing the record that it is working on, then stop). If you do so, the program will give you the choice of starting the report over again (from the beginning), or returning to the list of available master report formats, where you may choose a different report to run, or enter a "0" to return to the Main Menu. In starting the report over, you may again choose printer or screen, and summary only or regular reports.

- There is also a Stop/Start feature that will let you press any key (except, of course, ESCape and RESET) to temporarily stop the printout, and then press a key for a second time to re-start the report from the point where you stopped it. This is useful when screen reports scroll off the screen, when the paper slips in your printer, or when the phone rings and you want to stop the printer temporarily.

- When the report is finished, you may re-start it, choose another report to run, or return to the Main Menu. Note that any time you re-start a report you will have the choices mentioned above of screen or printer report, and normal or summary only report. So you could, for example, run a summary only report. So you could, for example, run a summary only report on your screen, then switch to your printer for a hard copy of the full report, and so forth, without returning to the list of available reports.

Report Layout Form

Report Title:

Date:

File Name:

Page Format: Other

Data Format:

(1) Standard

Date: Y/N | Rpt. width: space btwn sec. | PAGE ON

Page#: Y/N | Lines/pg: | Totspace/pg | Pause btwn pg: Y/N

Comment lines 1
Headings 2
Footnotes 3
(@ if you do not want a line centered) 4 5 6 7 8 9

Column Titles 1
(up to 9 lines) 2 3 4 5

Compu field formula
Field #
Tab
Print width
Long code descr.
Hor. Subt. #
after .
Col. Subt. / Tot.
Sort:
break
page break
Select:
Criteria
Print Opt.s